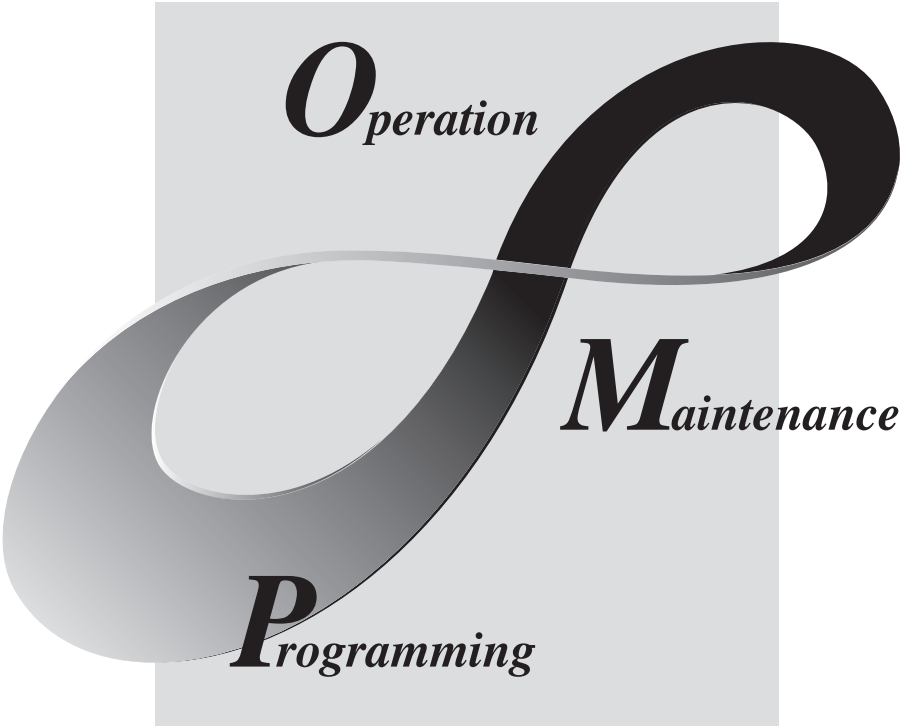
GX Explorer Version 2

Operating Manual

MITSUBISHI

MELSOFT



MELSOFT
Integrated FA Software

SW2D5C-EXP-E

• SAFETY PRECAUTIONS •

(Always read these instructions before using this equipment.)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.
The instructions given in this manual are concerned with this product. For the safety instructions of the programmable controller system, please read the CPU module user's manual.
In this manual, the safety instructions are ranked as "⚠WARNING" and "⚠CAUTION".

⚠ WARNING	Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.
⚠ CAUTION	Indicates that incorrect handling may cause hazardous conditions, resulting in minor or moderate injury or property damage.

Note that the ⚠CAUTION level may lead to a serious consequence according to the circumstances. Always follow the instructions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

[Design Instructions]

⚠ WARNING

- For data change, program change, and status control made to the PLC which is running from a Personal computer, configure the interlock circuit externally so that the system safety is ensured. The action to be taken for the system at the occurrence of communication errors caused by such as loose cable connection must be determined for online operation of PLC from Personal computers.

[Design Instructions]

⚠ CAUTION

- Be sure to read the manual careful and exercise an appropriate amount of caution connecting to PLC CPU and performing online operations (PLC CPU program change during RUN, forced input/output operation, RUN-STOP or other operation condition changes, remote control operation) while the personal computer is operating.
  Regarding the PLC CPU program change during RUN (Write during RUN), the program may be corrupted or have other problems depending on operation conditions. Exercise the appropriate amount of caution with regard to the Caution points in section 16.9.

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- Railway companies or Public service purposes, and/or any other cases in which establishment of a special quality assurance system is required by the Purchaser or End User.
- Aircraft or Aerospace, Medical applications, Train equipment, transport equipment such as Elevator and Escalator, Incineration and Fuel devices, Vehicles, Manned transportation, Equipment for Recreation and Amusement, and Safety devices, handling of Nuclear or Hazardous Materials or Chemicals, Mining and Drilling, and/or other applications where there is a significant risk of injury to the public or property.

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REVISIONS

* The manual number is given on the bottom left of the back cover.

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May, 2004	SH(NA)-080464ENG-A	First edition
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Nov., 2009	SH(NA)-080464ENG-D	Addition CONDITIONS OF USE FOR THE PRODUCT Correction SAFETY PRECAUTIONS, About Manuals, Product Makeup, Section 4.1 Deletions SOFTWARE USER REGISTRATION

Japanese Manual Version SH-080440-G

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INTRODUCTION

Thank you for choosing the Mitsubishi MELSOFT series comprehensive Factory Automation software.
Read this manual and make sure you understand the functions and performance of MELSEC series PLC thoroughly in advance to ensure correct use.

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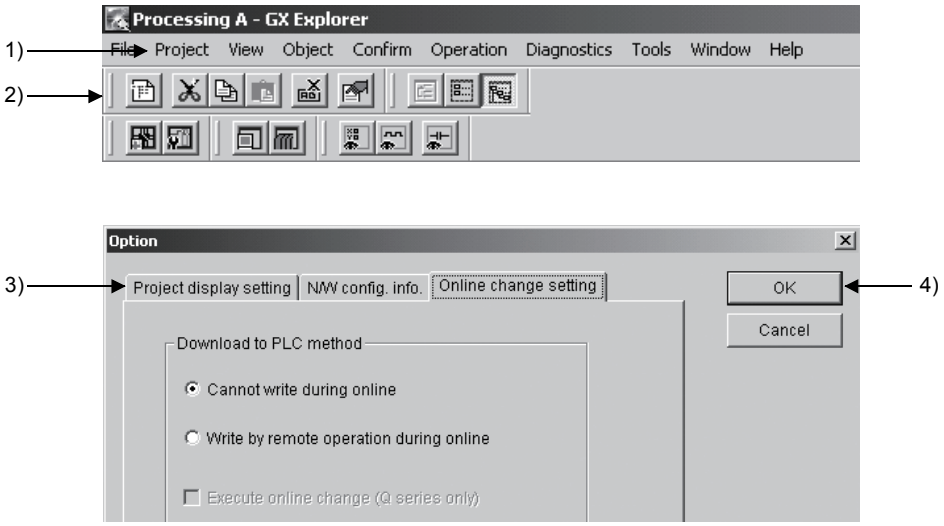
How to Use This Manual

Symbols used in this manual, and the contents and examples of them are shown below.



No.	Symbol	Contents	Example
1)	[ ]	Menu name of menu bar	[Project]
2)		Icon in toolbar	
3)	<< >>	Tab name of dialog box	<<Online charge setting>>
4)		Command button in dialog box	OK button

The functions that cannot be operated on GX Explorer are grayed (masked) and cannot be selected. There are the following reasons why they are not selectable.

(1) The PLC CPU used does not have the functions
For example, "File register read specification" of "Upload from PLC" setting is supported by A CPU only.

(2) The functions cannot be selected because they cannot be used with the currently operated function
For example, all functions cannot be selected, while "PLC status monitor" dialog box is open.
Refer to the manual to confirm if the function is supported by the PLC CPU used.

About Manuals

The following lists the manuals for this software package.
Refer to the following table when ordering manuals.

Related Manuals

Manual Name	Manual Number (Model Code)
GX Developer Version8 Operating Manual Explains the functions of the programing, printout, monitoring and debugging methods and so on GX Developer. (Sold separately.)	SH-080373 (13JU41)
GX RemoteService-I Version2 Operating Manual Explains setting, communicating and testing a personal computer by using GX RemoteService-I Version2. (Sold separately)	SH-080465ENG (13JU50)

Note:The Operating Manuals are included on the CD-ROM of the software package in a PDF file format. Manuals in printed form are sold separately for single purchase. Order a manual by quoting the manual number (model code) listed in the table above.

Generic Terms and Abbreviations Used in This Manual

Unless otherwise specified, the following generic terms and abbreviations are used in this manual.

Generic Term/Abbreviation	Description
GX Explorer	Abbreviation of the GX Explorer Version 2 project management tool.
GX Developer	Generic product name of GX Developer Version 8 (product types SW8D5C-GPPW, SW8D5C-GPPW-A, SW8D5C-GPPW-V, SW7D5C-GPPW-VA).
Personal computer	Generic term of the personal computers on which Windows® 98/Me, Windows NT® Workstation 4.0 and Windows® 2000 Professional operate.
DOS/V personal computer	IBM PC/AT or its compatible DOS/V personal computer.
PC CPU module	MELSEC-Q series compatible PC CPU module (CONTEC CO. LTD. make)
Basic model QCPU	Generic term for Q00JCPU, Q00CPU and Q01CPU
High Performance model QCPU	Generic term for Q02 (H) CPU, Q06CPU, Q12HCPU and Q25HCPU
Process CPU	Generic term for Q12PHCPU and Q25PHCPU
MELSECNET/10(H)	Generic term of the MELSECNET/10 network system and MELSECNET/H network system.
CC-Link	Abbreviation of the CC-Link (Control & Communication Link) system.
QPLC (Q mode)	Generic term of the MELSEC-Q series PLC CPUs (Q00J, Q00, Q01, Q02(H), Q06H, Q12H, Q25H, Q12PH and Q25PH) and MELSECNET/H remote I/Os supported by GX Developer.
QnAPLC	Generic term of the MELSEC-QnA series PLC CPUs (Q2A, Q2AS(H), Q2AS1, Q2AS(H)S1, Q3A, Q4A, Q4AR) supported by GX Developer.
QPLC (A mode)	Generic term of the Q02(H)-A and Q06H-A.
APLC	Generic term of the MELSEC-A series PLC CPUs (A0J2H, A1FX, A1S, A1SJ, A1SH, A1SJH, A1N, A2C, A2CJ, A2N(S1), A2N(S1), A2S, A2SH, A3N, A2A(S1), A3A, A2U(S1), A2US(S1), A2AS(S1), A2AS-S30, A2AS-S60, A2USH-S1, A3U, A4U) and motion controllers (SCPUs) supported by GX Developer.
Motion controller (SPLC)	Generic term of the A171SH(N), A172SH(N), A173UH(S1), A273UH(S3), Q172 and Q173.
FXPLC	Generic term for PLC available with MELSEC-F (The target PLCs are FX_0, FX_{0S}, FX_{0N}, FX_1, FX, FX_2, FX_{2C}, FX_{1S}, FX_{1N}, FX_{2N} and FX_{2NC}.)
AnNPLC	A1NCPU, A2NCPU(S1), A3NCPU
AnAPLC	A2ACPU(S1), A3A
AnUPLC	A2UCPU(S1), A2USCPU(S1), A2ASCPU(S1), A2ASCPU-S30, A2ASCPU-S60, A2USHCPU-S1, A3U, A4U
A series	For GX Developer PLC type selection by ACPU
QnA series	For GX Developer PLC type selection by QnACPU
Q series	For GX Developer PLC type selection by QCPU (Q mode)
FX series	For GX Developer PLC type selection by FXCPU

Generic Term/Abbreviation		Description
Computer link Module	For A series	A1SJ71C24-R2, A1SJ71C24-R4, A1SJ71C24-PRF A2CCPUC24(-PRF), A1SCPUC24-R2
	For AnU	AJ71UC24, A1SJ71UC24-R2, A1SJ71UC24-R4, A1SJ71UC24-PRF
Serial communication Module	For QnA eries	Generic term for AJ71QC24, AJ71QC24-R2, AJ71QC24-R4, AJ71QC24N, A1SJ71QC24, A1SJ71QC24-R2, AJ71QC24N-R2, AJ71QC24N-R4, A1SJ71QC24N and A1SJ71QC24N-R2
	For Q series	Generic term for QJ71C24 and QJ71C24-R2.
C24		Computer link Module, Serial Communication Module.
QE71		AJ71QE71(B5), A1SJ71QE71-B2, A1SJ71QE71-B5
E71		AJ71AJ71E71-S3, A1SJ71E71-B2-S3, A1SJ71E71-B5-S3 A1SJ71E71-B2, A1SJ71E71-B5, AJ71E71N-B2, AJ71E71N-B5T, A1SJ71E71N-B2, A1SJ71E71N-B5T
Q series-compatible E71		Generic term for QJ71E71, QJ71E71-B2 and QJ71E71-100.
Ethernet module		Generic term for the AJ71E71-S3, A1SJ71E71-B2-S3, A1SJ71E71-B5-S3, A1SJ71E71-B2, A1SJ71E71-B5, AJ71E71N-B2, AJ71E71N-B5T, A1SJ71E71N-B2, A1SJ71E71N-B5T, AJ71QE71, AJ71QE71-B2, AJ71QE71-B5, A1SJ71QE71-B5, QJ71E71, QJ71E71-B2, QJ71E71-100.
CC-Link module		Generic term for the AJ61BT11, A1SJ61BT11, AJ61QBT11, A1SJ61QBT11, QJ61BT11.
CC-Link bridge module		AJ65SBT-CLB CC-Link-CC-Link/LT bridge module.
G4 module		AJ65BT-G4(-S3) Peripheral Device Connection Module.
MELSECNET/10 board		Generic term for the A70BD-J71QLP23, A70BD-J71QLP23G, A70BD-J71QLR23, A98BD-J71QLP23/ A70BD-J71BR13/ A98BD-J71QBR13 MELSECNET/10 interface board.
MELSECNET/H board		Generic term for the Q80BD-J71BR11/ Q80BD-J71LP21-25/ Q80BD-J71LP21G interface board.
Ethernet board		Generic term for Ethernet PC card/Ethernet interface board.
CC-Link board		A80BD-J61BT11/A80BD-J61BT13 CC-Link Interface board.
CPU board		A80BD-A2USH-S1 PLC CPU board.

Product Makeup

GX Explorer is made up of the following products.

Type	Product Name	Quantity
SW2D5C-EXP-E(V)	GX Explorer Version 2 (1-license product) (CD-ROM)	1
	License agreement	1
	End-user software license agreement	1
	Method of installing the MELSOFT series	1
	Software registration notice	1
	INSTRUCTIONS ABOUT THE USAGE OF GX Explorer	1
SW2D5C- EXP-E(V)A	GX Explorer Version 2 (Multiple license product) (CD-ROM)	1
	License agreement	n*1
	End-user software license agreement	1
	Method of installing the MELSOFT series	1
	Software registration notice	1
	INSTRUCTIONS ABOUT THE USAGE OF GX Explorer	1

*1: The number of included license agreements is equivalent to the number of licenses.

1 OVERVIEW

This manual explains the system configuration, functions and operation of MELSEC PLC-compatible maintenance tool, GX Explorer.

1.1 Features

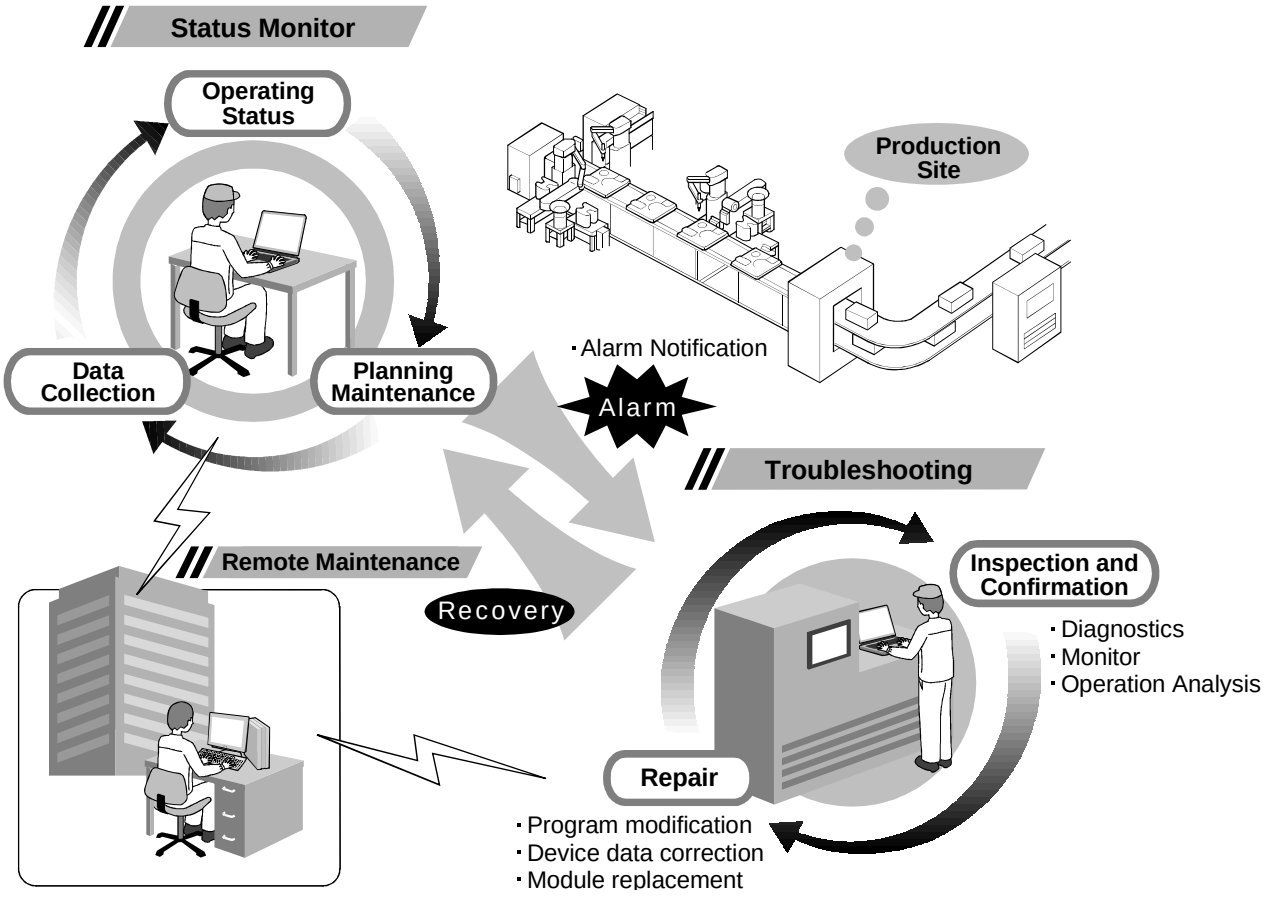
GX Explorer is the maintenance software package that includes functions required for PLC system maintenance.

Wide rage of maintenance functions

GX Explorer (need to be connected to the target PLC system) always monitors the operating status of PLC system at the production site and executes alarm notification when an error occurs.
Furthermore, it includes following troubleshooting (error investigation and recovery) functions, diagnostics, monitor, operation analysis and program change (download to PLC).

Various connection routes

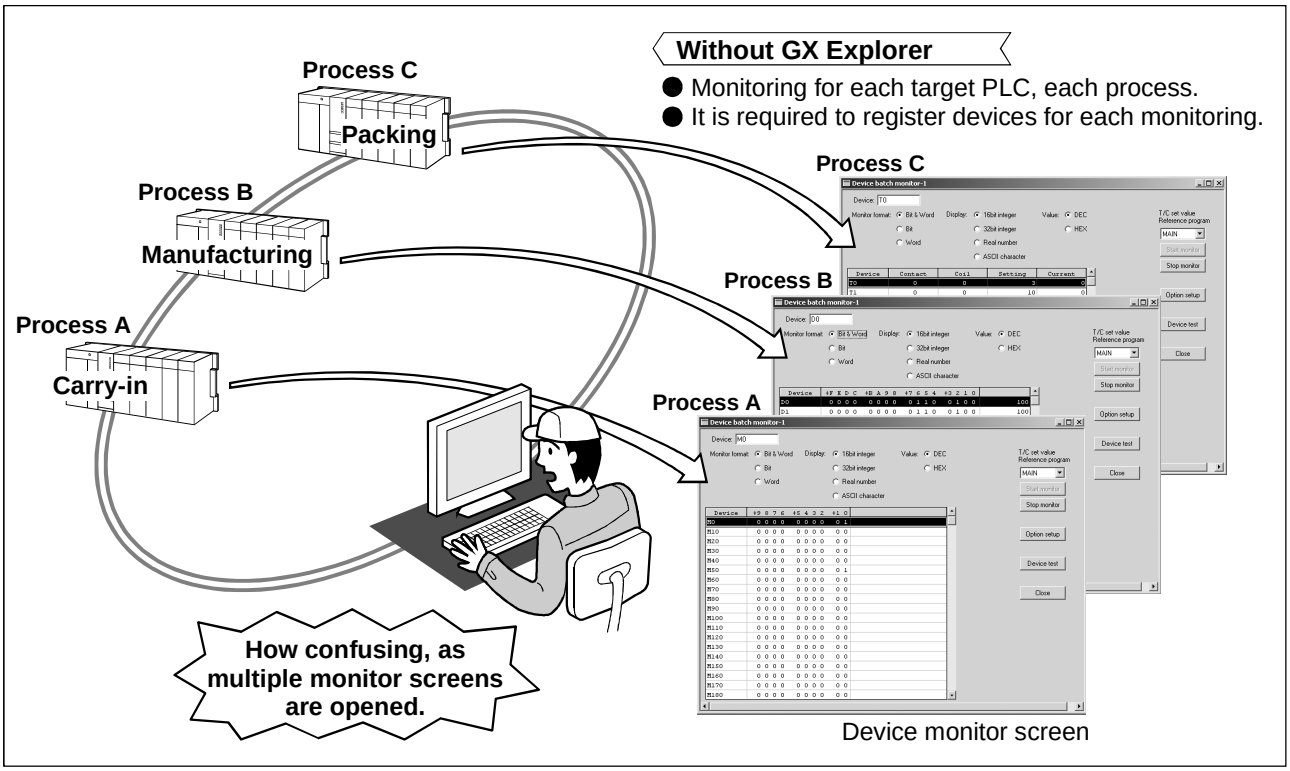
GX Explorer is compatible with various networks and can connect to the PLC system at the production site through various connection routes. When making a connection via the Internet, the remote production site can be maintained as the same as on-site maintenance.
(When connecting this software package via the Internet, use of a personal computer/Web server module (QJ71ES96) in which GX RemoteService-I is installed as the server is required.)



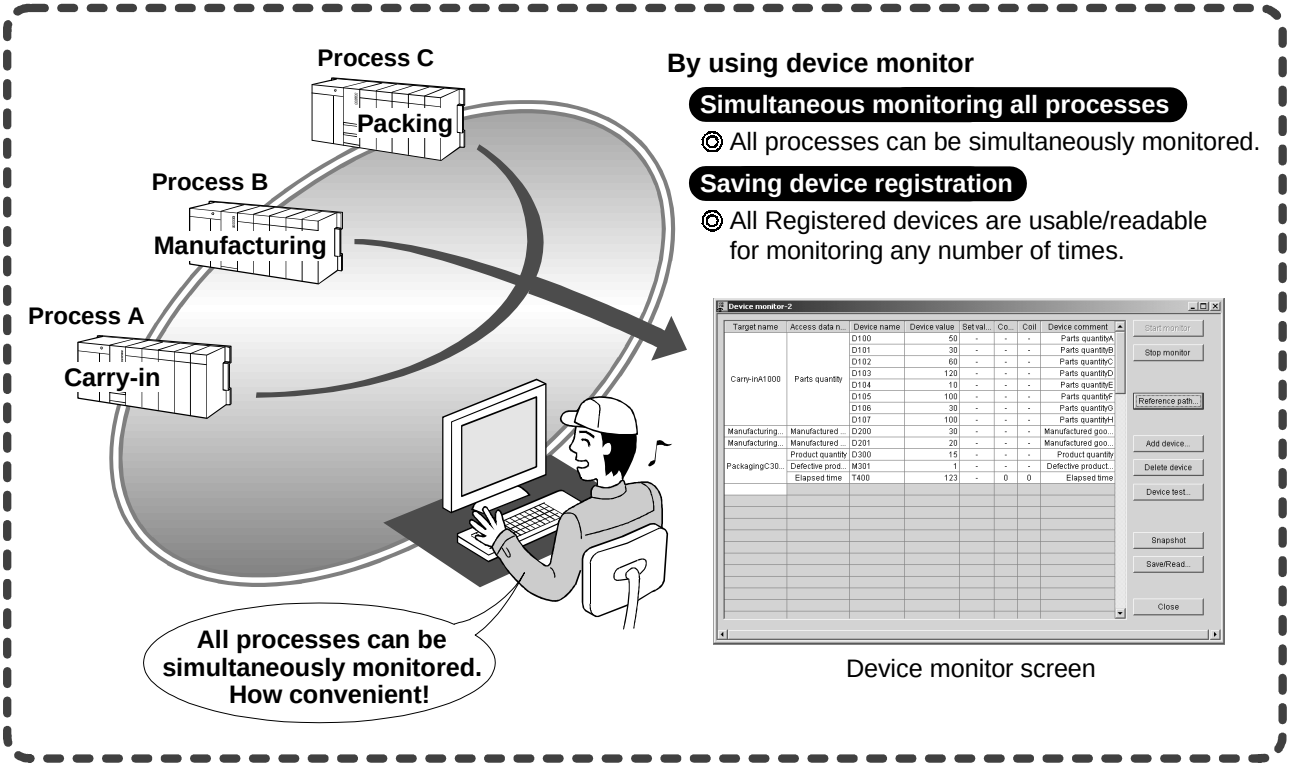
1 - 1

(1) Device monitor easier to see

— Simultaneous monitor of multiple PLC CPUs —



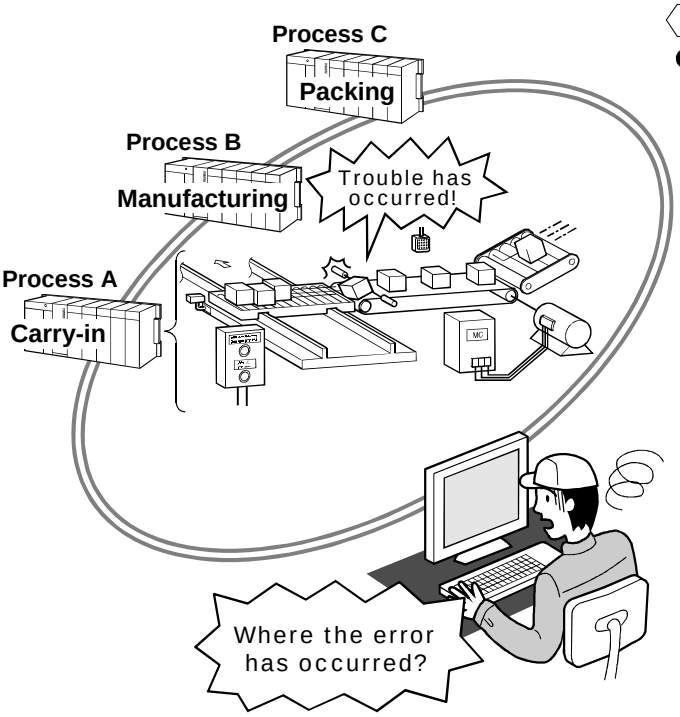
When using ***GX Explorer***



1 - 2

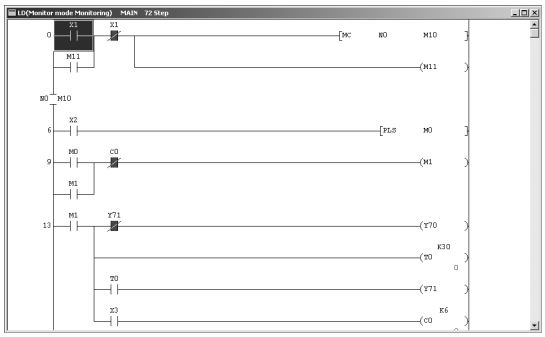
(2) Diagnostics function that notifies of error occurrence

— Alarm details display —



Without GX Explorer

● It takes time to find where the error has occurred.



Ladder monitor screen

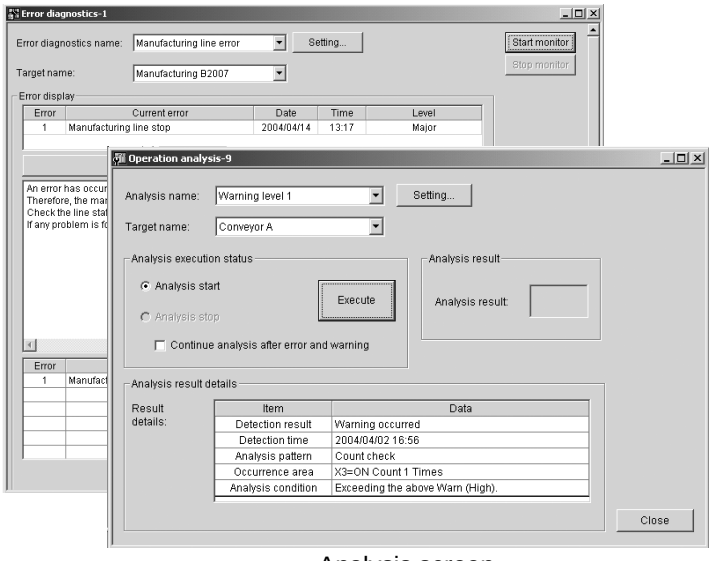
When using GX Explorer

By using alarm notification

The error section and cause are shown on the screen

◎ Alarm details are notified in order to specify the error cause and take the corrective action.

Error diagnostics screen



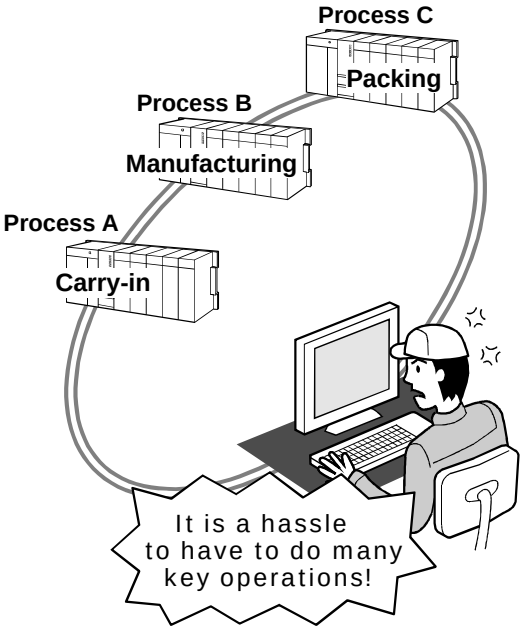
Analysis screen

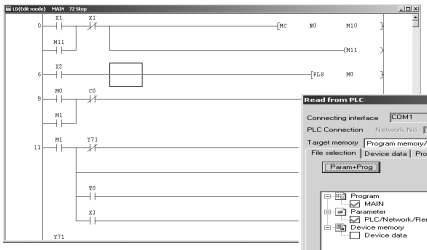
(3) Convenient project management

— Upload from PLC/ Download to PLC —

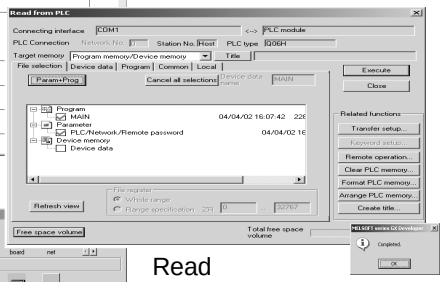
Without GX Explorer

● The target PLC CPU must be changed for each Read from PLC/Write to PLC.

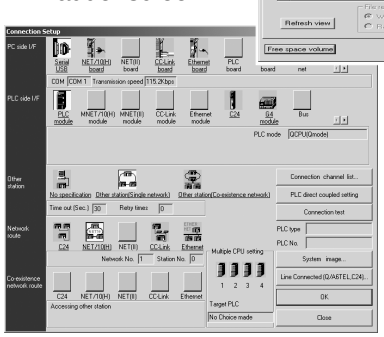




Ladder screen



Read from PLC screen



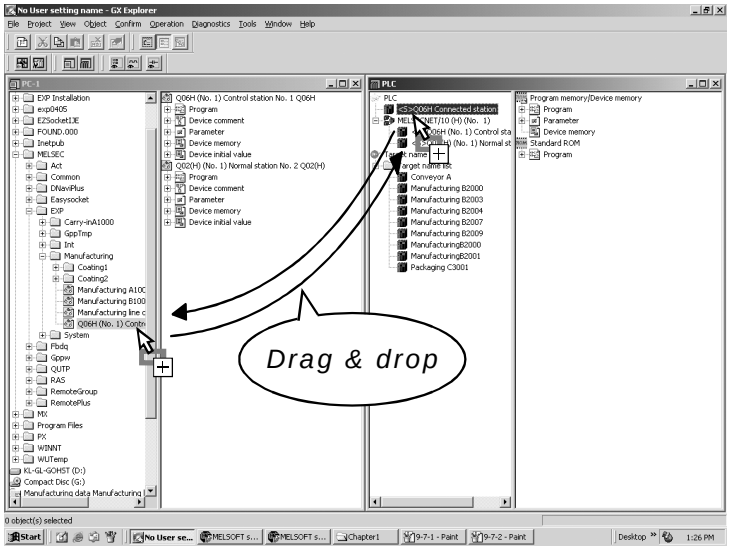
Transfer setup screen

When using GX Explorer

By drag & drop

Simultaneous upload from/download to PLC of multiple programs

◎ Multiple programs can be simultaneously upload from/download to multiple PLC CPUs.

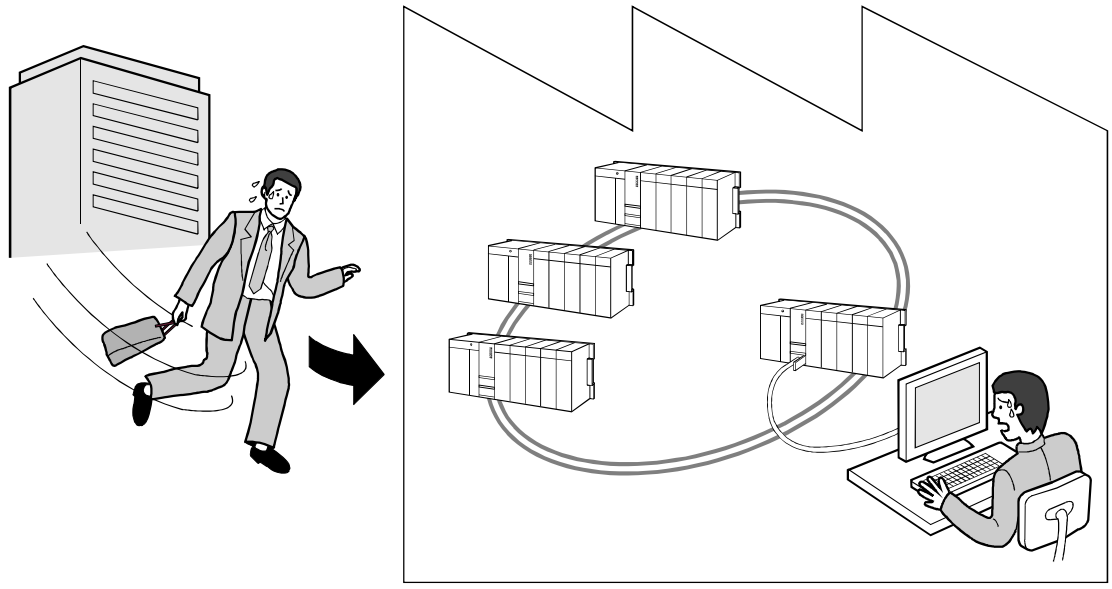


(4) Maintenance of remote location

— Access to PLC CPU via the Internet or Intranet —

Without GX Explorer

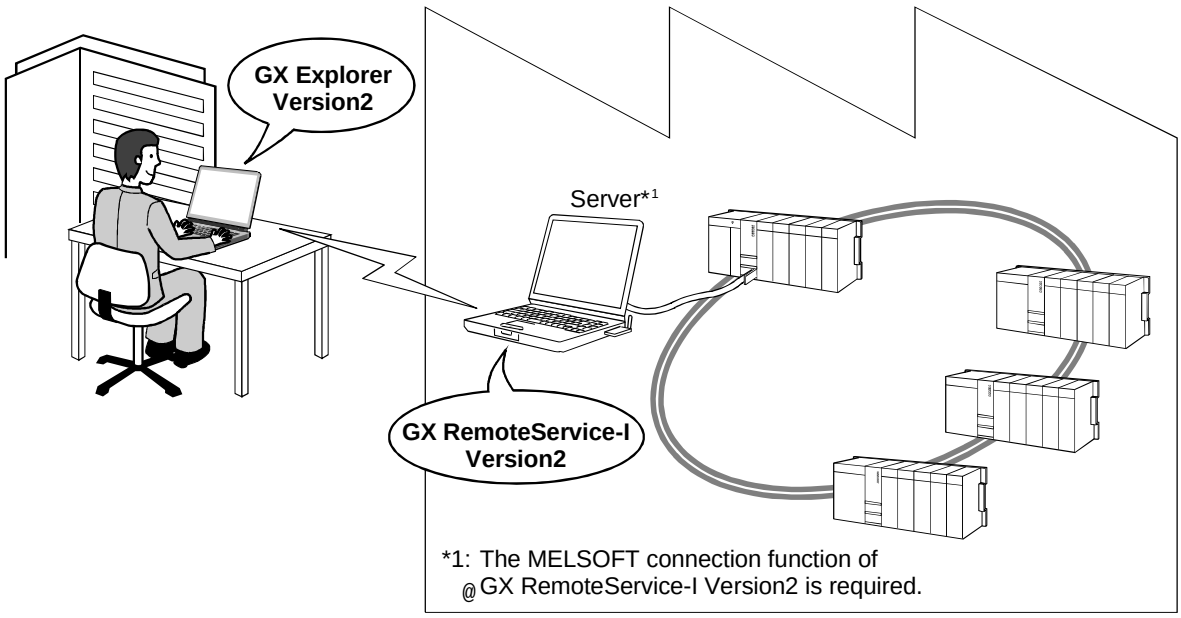
● Without GX Explorer, the system in a remote location must be maintained on-site.



When using ***GX Explorer***

By remote maintenance

◎ The system in a remote location can be maintained as the same as on-site maintenance.



*1: The MELSOFT connection function of @GX RemoteService-I Version2 is required.

(5) Program operation can be virtually confirmed

Use of timing chart/ladder monitor enables the bit device status (ON/OFF) and change of word device value can be virtually confirmed.

(6) Program backup and restore

The target data can be easily backed up or restored by drag & drop operation.

(7) File transfer by FTP

File transfer can be made between personal computers by FTP via the Intranet.

(8) Other convenient functions — Free customisation —

GX Explorer can be freely customized for user-friendly operating environment.

Easy menu

Frequently-used functions can be easily selected without the necessity to find them from the menu bar, as they can be displayed on "Easy menu" dialog box.

For details, refer to Section 11.1.1 (2).

Target name specification

Target PLC CPU and the connection route can be saved as any name. By specifying the PLC CPU name, the target PLC CPU can be easily changed.

For details, refer to Section 8.2.

Access data name

Devices to be monitored can be grouped and saved as any name. This setting is applicable for the "Device monitor" and "Timing chart" settings.

For details, refer to Section 8.3.

User setting name

Operating environment settings can be saved as any name according to various applications.

Read out the saved operating environment by specifying the corresponding name.

For details, refer to Section 5.1.1 (1) and Section 6.1 to 6.5.

(For information on applicable data, refer to the table "Data that can be saved in the user setting name" of Section 6.4 "Saving the User Setting Name As")

(9) Various applicable devices

Extension file register, buffer memory of all PLC CPU types can be directly seen.

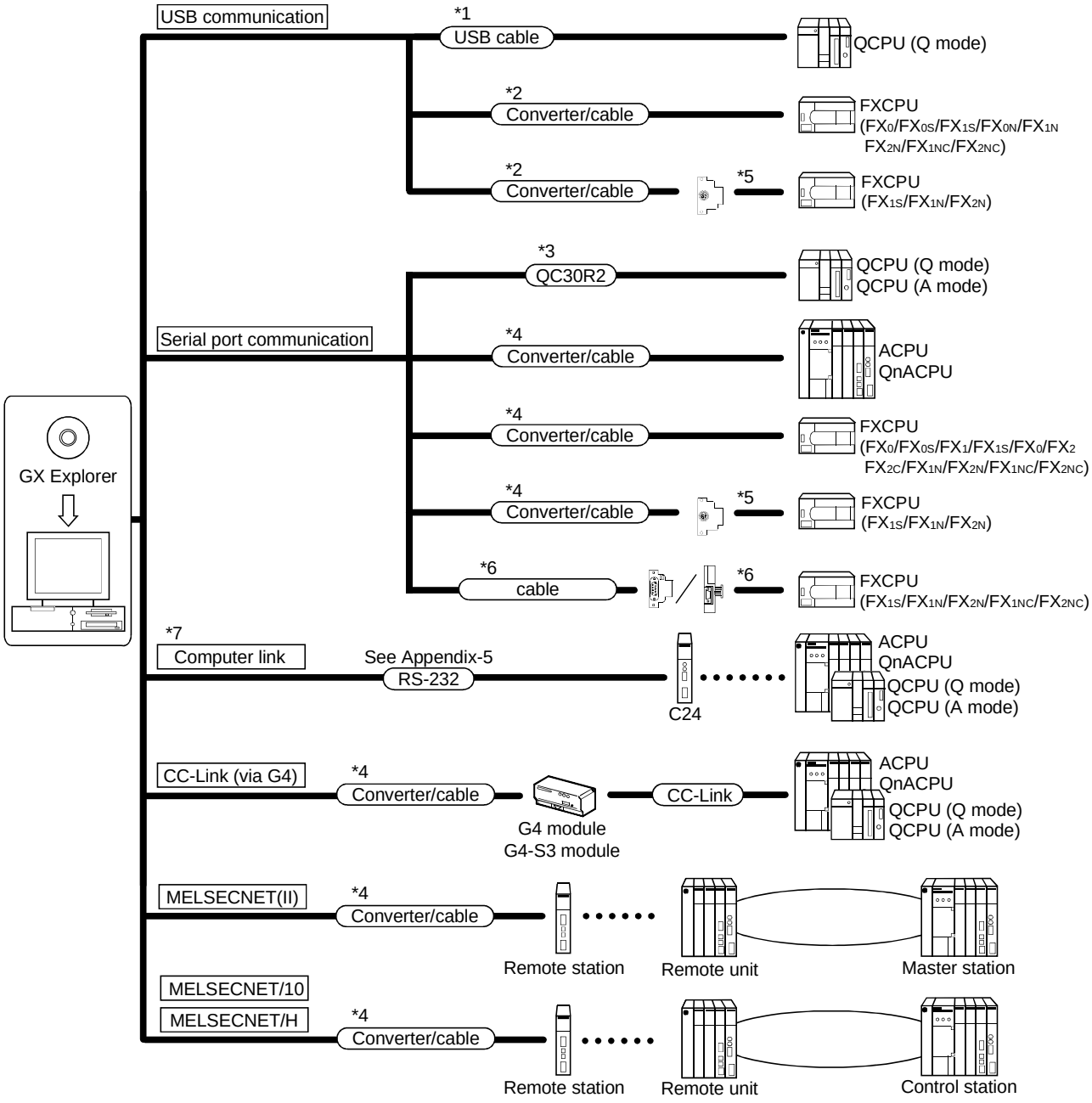
POINT
• For details on extension file register and buffer memory compatible with GX Explorer, refer to Appendix 3.

2 SYSTEM CONFIGURATION

2.1 System Configuration

2.1.1 Connection from the Serial/USB Port

The following system configuration is made up by connection from the serial port.

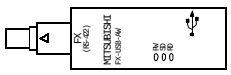


*1: About the USB cable (QCPU (Q mode) compatible)

1) Usable when Windows® 98 and USB driver have been installed.
2) Unusable for Windows NT® , Workstation 4.0.
3) Use of the USB cable allows only one PLC CPU to be connected.
4) Use the USB cable which conforms to the USB Standard Rev. 1.1.
5) When using a USB cable for communication, note the following precautions and restrictions.
   - Do not communicate the PLC CPU while any of the following personal computer functions, Resume function, Suspend setting, Power saving function, Standby mode is ON, as this may cause a communication error.
     Make sure to communicate with the PLC CPU without these settings.
   - Do not frequently perform the following operations during communication with PLC CPU: removal of USB cable, reset of PLC CPU and power-ON/PFF, as this may cause a communication error and the communication may not recovered from the error.
     Therefore, make sure not to perform the GX Explorer online operation* when performing any of the above operations.
     If the communication is not recovered, completely pull the USB cable. Then five seconds later, reinsert the cable. (After this action is taken, the communication error will occur when the first attempt to communicate is made. However, if it occurs once, the error will not occur at the second and later attempts.)
     * Online operation: Execution of the functions included in the menu bar, [Confirm], [Operation] and [Diagnostics].
   - A communication error may occur depending on the combination of personal computer module and USB cable, etc.
     In this case, follow the provided message.

*2 About the converter/cable (FXCPU compatible)

1) System configuration
   FX-USB-AW USB cable (Included with product)



2) Usable when Windows® 98, Windows® Me, Windows® 2000 Professional, Windows® XP Professional or Windows® XP Home edition and the driver included in the CD-ROM have been installed.
3) Unusable for Windows® 95, Windows NT® Workstation 4.0.
4) Refer to Section 8.1, for serial COM port number setting.

*3: About the cable (QCPU (Q mode), QCPU (A mode) compatible)

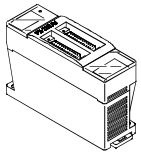
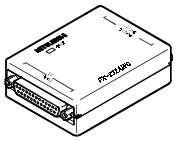
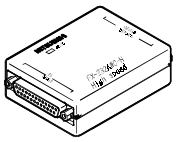
For communication in 115.2/57.6 kbps
Fast communication cannnot be made if the Personal computer used is not compatible with the communication speed of 115.2/57.6 kbps.
If a communication error occurs, reduce the baud rate etting and restart communication.

The following cable has been confirmed by Mitsubishi Electric that it will work properly.

Using the cable of Mitsubishi Electric make.

RS-232 cable
QC30R2 (when Personal computer connector is D-sub, 9-pin)

*4: About the converter/cable (ACPU, QnACPU, FXCPU compatible)
1) Using the products of Mitsubishi Electric make

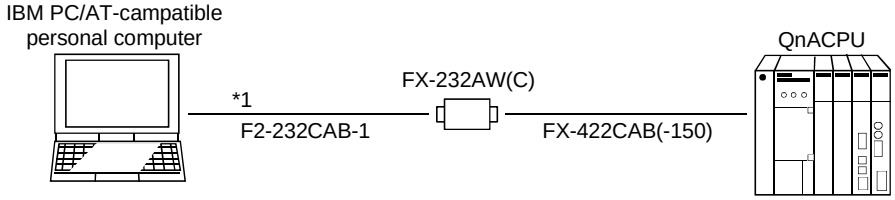
Personal computer Side (RS-232 cable)	RS-232/RS-422 Converter	PLC CPU Side (RS-422 cable)
F2-232CAB-1 (when Personal computer connector is D-sub, 9-pin)	 FX-232AW  FX-232AWC  FX-232AWC-H (FX series only)	For ACPU, QnACPU, FX1/FX2/FX2CCPU FX-422CAB (0.3m) FX-422CAB-150 (1.5m) For FX0/FX0S/FX0N/FX1S/FX1N/FX2N/FX2NCCPU FX-422CABO (1.5m)

- How to identify compatibility of the F2-232CAB and F2-232CAB-1 cables with the ACPU and QnACPU
  Check the indication of the model label attached to the cable.

Incompatible products		Compatible products(with indication of F/FX/A)
F2-232CAB Y990C*****	→	F2-232CAB(F/FX/A) Y990C*****
F2-232CAB-1 Y990C*****	→	F2-232CAB-1(F/FX/A) Y990C*****

- When connecting to FX series, make sure to use the device in the above table.

Example of connecting IBM-PC/AT-compatible personal computer and QnA CPU using EX-232AW(C)



*1: A straight cable (connector) for converting between D sub 9 pin and D sub 25 pin might be required, depending on the cable.
Use the conversion cable by referring to the manual of the IBM-PC/AT-compatible personal computer.
(RS-232 cable for connection between IBM-PC/AT-compatible personal computer and converter mentioned in the above)
F2-232CAB-1 (D sub 9 pin↔D sub 25 pin)

REMARK

Access can be made to the PLC CPU through GOT-F900 (instead of a converter).
For details, refer to the manual or catalog of the above product.

*5: Function expansion board

Series	Function expansion board
FX_{2N}	FX2N-422-BD
FX_{1S}, FX_{1N}	FX1N-422-BD

POINT

When using a function expansion board, PLC parameters must be set using GX Developer.
For details, refer to "System configuration" provided in GX Developer operating manual.

*6: RS-232 cable and function expantion board (special adapter)

Shape of serial port for personal computer	Series	Required function expansion board and special adapter	RS-232 cable
D sub 9 pin	FX_{2N}	FX0N-232ADP+FX2N-CNV-BD	F2-232CAB-1
		FX2N-232-BD	FX-232CAB-1
		FX2NC-232ADP+FX2N-CNV-BD	
	FX_{1NC}, FX_{2NC}	FX0N-232ADP	F2-232CAB-1
		FX2NC-232ADP	FX-232CAB-1
	FX_{1S}, FX_{1N}	FX0N-232ADP+FX1N-CNV-BD	F2-232CAB-1
		FX1N-232-BD	FX-232CAB-1
		FX2NC-232ADP+FX1N-CNV-BD	
S sub 25 pin	FX_{2N}	FX0N-232ADP+FX2N-CNV-BD	F2-232CAB
		FX2N-232-BD	F2-232CAB-1
		FX2NC-232ADP+FX2N-CNV-BD	
	FX_{1NC}, FX_{2NC}	FX0N-232ADP	F2-232CAB
		FX2NC-232ADP	F2-232CAB-1
	FX_{1S}, FX_{1N}	FX0N-232ADP+FX1N-CNV-BD	F2-232CAB
		FX1N-232-BD	F2-232CAB-1
		FX2NC-232ADP+FX1N-CNV-BD	

POINT

When using a function expansion board, PLC parameters must be set using GX Developer.
For details, refer to "System configuration".

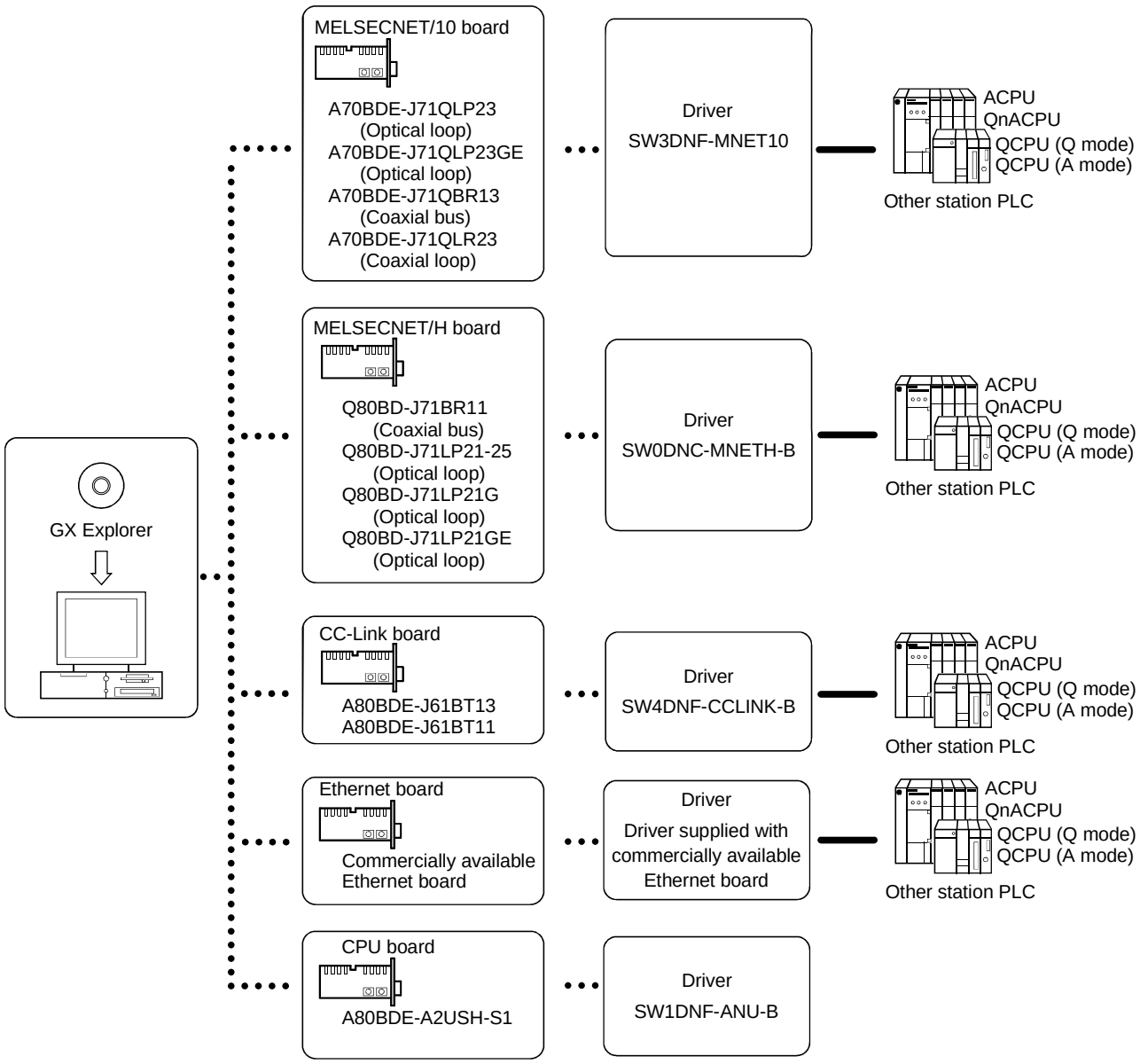
*7: Computer link
When going through a computer link module to ACPU, the programs including V, X (indexing) cannot be monitored.

POINT

- When using a function expansion board, PLC parameters must be set using GX Developer.
  For details, refer to "System configuration" provided in GX Developer operating manual.
- Before handling the RS-422 interface conversion cable/converter, please read its specifications, precautions, etc. carefully in the manual of the corresponding product and handle it correctly.
- When disconnecting or reconnecting the conversion cable/converter that receives 5VDC power from the RS-422 interface, switch power off on the PLC CPU side before starting work.
- When disconnecting or reconnecting the peripheral device or conversion cable that does not receive 5VDC power from the RS-422 interface (whose power is supplied from an external power supply), be sure to use an earth band or touch a grounded metal object, etc. before starting work to discharge static electricity from the cable, human body, etc. After that, handle it in the following procedure.
  1) Switch power off on the personal computer side.
  2) Power off the conversion cable/converter. When it has an FG terminal, ground it.
  3) Connect/disconnect the conversion cable/converter between the personal computer and PLC CPU.
  4) Power on the conversion cable/converter.
  5) Power on the personal computer.
  6) Start up the software package.

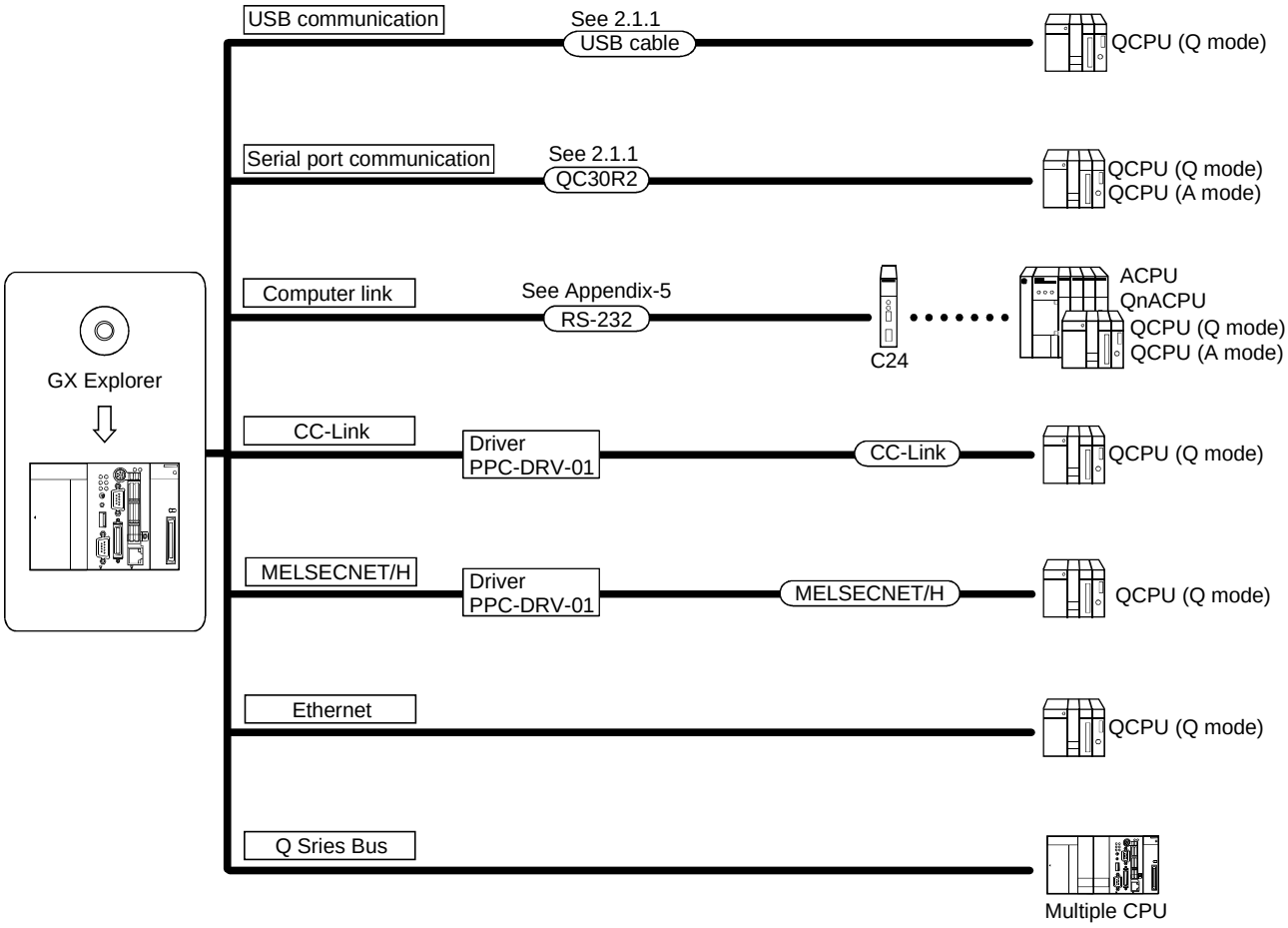
2.1.2 Connection from the Interface Boards

The following system configuration is made up by connection from the interface boards. Refer to the corresponding board manuals for the way to connect the boards and install the drivers.



2.1.3 Connection from GX Explorer Installed in PC CPU Module

(1) The following is the system configuration that can be connected from GX Explorer installed in the PC CPU module.



2.1.4 System Equipment Lists

(1) The following list indicates module connectable from the serial port.

PLC Series	Module Name	Module Model
Q series	PLC CPU module	Q00J, Q00, Q01, Q02(H), Q06H, Q12H, Q12PH, Q25H, Q25PH
		Q02(H)-A, Q06H-A
	Serial communication module∗1	QJ71C24, QJ71C24-R2, QJ71C24N, QJ71C24N-R2, QJ71C24N-R4
	MELSECNET/H network remote I/O module	QJ72LP25, QJ72BR15
	G4-S3 module	AJ65BT-G4-S3
QnA series	PLC CPU module	Q2A, Q2AS(H), Q2AS1, Q2AS(H)S1, Q3A, Q4A, Q4AR
	Serial communication module∗2	AJ71QC24, AJ71QC24-R2, AJ71QC24-R4, AJ71QC24N, A1SJ71QC24, A1SJ71QC24-R2, AJ71QC24N-R2, AJ71QC24N-R4, A1SJ71QC24N, A1SJ71QC24N-R2
	MELSECNET/10 network remote I/O module	AJ72QLP25, AJ72QBR15, A1SJ72QLP25, A1SJ72QBR15, QJ72LP25, QJ72BR15
	G4 module	AJ65BT-G4, AJ65BT-G4-S3
A series	PLC CPU module	A0J2H, A1S(S1), A1FX, A1SJ, A1SH, A1SJH, A1N, A2C, A2CJ, A2N(S1), A2S(S1), A2SH(S1), A3N, A2A(S1), A3A, A2U(S1), A2US(S1), A2AS(S1), A2AS-S30, A2AS-S60, A2USH-S1, A3U, A4U
	Computer link module∗3	AJ71UC24, A1SJ71UC24-R2, A1SJ71UC24-PRF, A1SJ71C24-R2, A1SJ71C24-PRF, A1SCPUC24-R2, A2CCPUC24, A2CCPUC24-PRF, A1SJ71UC24-R4
	MELSECNET(II) data link remote I/O module	AJ72P25, AJ72R25
	MELSECNET/B data link remote I/O module	AJ72T25B, A1SJ72T25B
	MELSECNET/10 network remote I/O module	AJ72LP25, AJ72LP25, AJ72BR15
	G4 module	AJ65BT-G4, AJ65BT-G4-S3
FX series	PLC CPU module	FX0(S), FX0N, FX1, FX2(C), FX1S, FX1N, FX2N(C)
MOTION (SCPU)	PLC CPU module	A171SH, A172SH, A173UH(S1), A273UH(S3)

(2) The following table indicates the modules which can be connected from the MELSECNET/10 or MELSECNET/H (MELSECNET/10 mode) board.

PLC Series	Module Name
Q series	QJ71LP21, QJ71LP21G, QJ71BR11, QJ71LP21-25, QJ71LP21S-25
QnA series	AJ71QLP21, AJ71QBR11, A1SJ71QLP21, A1SJ71QBR11
A series	AJ71LP21, AJ71BR11, A1SJ71LP21, A1SJ71BR11

(3) The following table indicates the modules which can be connected from the MELSECNET/H board.

PLC Series	Module Name
Q series	QJ71LP21, QJ71BR11, QJ71LP21-25

(4) The following list indicates modules connectable from the CC-Link board.

PLC Series	Module Name
Q series	QJ61BT11, QJ61BT11N
QnA series	AJ61QBT11, A1SJ61QBT11
A series	AJ61BT11, A1SJ61BT11

(5) The following list indicates modules connectable from the Ethernet board.

PLC Series	Module Name
Q series	QJ71E71, QJ71E71-B2, QJ71E71-100, QJ71E71-B5
QnA series	AJ71QE71, AJ71QE71-B5, A1SJ71QE71-B2, A1SJ71QE71-B5, AJ71QE71N-T, A1SJ71QE71N-T, AJ71QE71N-B5, A1SJ71QE71N-B5, AJ71QE71N-B2, A1SJ71QE71N-B2, AJ71QE71N-B5T, A1SJ71QE71N-B5T
A series	AJ71E71-S3, A1SJ71E71-B2-S3, A1SJ71E71-B5-S3, A1SJ71E71-B2, A1SJ71E71-B5, AJ71E71N-B2, AJ71E71N-B5T, A1SJ71E71N-B2, A1SJ71E71N-B5N, AJ71E71N-T, A1SJ71E71N-T, AJ71E71N-B5, A1SJ71E71N-B5

*1: Via the serial communication module (QCPU (Q mode))
The following table indicates whether the interfaces may be connected to the personal computer when the PLC CPU is accessed from the personal computer via the serial communication module (Q series).
If the module cannot be connected directly with the personal computer, it may be usable as the "n"th module of multidropping.

Type	Interface	1:1 Connection	Multidropping	
			First module	"n"th module
QJ71C24	RS-232	○	○	×
	RS-422/485	×	×	○
QJ71C24-R2	RS-232	○	×	×
	RS-232	×	×	×

*2: Via the serial communication module (QnACPU)
The following table indicates whether the interfaces may be connected to the personal computer when the PLC CPU is accessed from the personal computer via the serial communication module (QC24).
If the module cannot be connected directly with the personal computer, it may be usable as the "n"th module of multidropping.

Type	Interface	1:1 Connection	Multidropping	
			First module	"n"th module
AJ71QC24	RS-232	○	○	×
	RS-422/485	×	×	○
AJ71QC24N	RS-232	○	○	×
	RS-422/485	×	×	○
AJ71QC24-R2	RS-232	○	×	×
	RS-232	×	×	×
AJ71QC24N-R2	RS-232	○	×	×
	RS-232	×	×	×
AJ71QC24-R4	RS-422	×	×	×
	RS-422/485	×	×	○
AJ71QC24N-R4	RS-422	×	×	×
	RS-422/485	×	×	○
A1SJ71QC24	RS-232	○	○	×
	RS-422/485	×	×	○
A1SJ71QC24N	RS-232	○	○	×
	RS-422/485	×	×	○
A1SJ71QC24-R2	RS-232	○	×	×
	RS-232	×	×	×
A1SJ71QC24N-R2	RS-232	○	×	×
	RS-232	×	×	×

*3: Via the computer link module

About the computer link module

Note that when the PLC CPU is accessed from the personal computer via the computer link module, the modules that may be connected directly with the personal computer are limited.

If the module cannot be connected directly with the personal computer, it may be usable as the "n"th module of 1:n connection.

Type	Interface	1:1 Connection	1:n Connection	
			First module	"n"th module
AJ71UC24	RS-232	○	○	×
	RS-422/485	×	×	○
AJ71C24-S6	RS-232	○	○	×
	RS-422	×	×	○
AJ71C24-S8	RS-232	○	○	×
	RS-422	×	×	○
A1SJ71UC24-R2	RS-232	○	×	×
A1SJ71C24-R2	RS-232	○	×	×
A1SJ71UC24-PRF	RS-232	○	×	×
A1SJ71C24-PRF	RS-232	○	×	×
A1SJ71UC24-R4	RS-422/485	×	×	○
A1SJ71C24-R4	RS-422/485	×	×	○
A1SCPUC24-R2	RS-232	○	×	×
A2CCPUC24	RS-232	○	○	×
	RS-422	×	×	×
	RS-422/485	×	×	○
A2CCPUUC24-PRF	RS-232	○	○	×
	RS-422	×	×	×
	RS-422/485	×	×	○

2.2 Operating Environment

The following is the operating environment of GX Explorer.

Item		Description	
Computer		200MHz or more (recommended) Pentium® personal computer on which Windows® operates	
Operating System		Microsoft® Windows® 98 operating system Microsoft® Windows® Me operating system Microsoft® Windows NT® Workstation 4.0 operating system*1 Microsoft® Windows® 2000 Professional operating system*1 Microsoft® Windows® XP Professional operating system*1 Microsoft® Windows® XP Home Edition operating system*1	
Necessary memory		64MB or more recommended	
Free hard disk area	For installation	130MB or more	
	For operation	100MB or more	
Disk drive		CD-ROM disk drive	
Display resolution		1024 × 768 dots or more (XGA or more)	
Required software (Required only when combined with GX RemoteService-I Version2.)	For personal computer CPU	Web server	Personal Web Server version4 or later Internet Information Server version5 or later Peer Web Services verision4 or later
		Web browser	Internet Explorer5.5 or later Netscape4.5 or later
		Mailer	Not specified
	For Web server module	Java execution environment (JavaVM)	Microsoft JavaVM of Build No. 3309 or later
		Web browser	Internet Explorer5.5 Internet Explorer6.0
		Mailer	Not specified

*1: Administrator privilege is required to install GX Explorer into the following operating systems, WindowsNT® Workstation4.0, Windows® 2000 Professional, Windows® XP Professional and Windows® XP Home Edition. In addition, Administrator privilege is required to use GX Explorer in Windows® XP Professional and Windows® XP Home Edition.

POINT

- Instruction for use of the online manual
  Addition of memory ensures more comfortable use.
- Instruction for use of the PDF data
  Use with addition of personal computer memory ensures comfortable operation.

POINT

- Permission of access to folders and files
  Use of this product may change the files within the installation destination folder and sub folders.
  Therefore, the user must be granted write access to these folders and files, if either of the following operating systems is used.
  Without this setting, product may not operate correctly.
    Microsoft® Windows® XP Professional
    Microsoft® Windows® XP Home Edition
    Microsoft® Windows® 2000 Professional
    Microsoft® Windows NT® Workstation 4.0
  It is recommended to log on as an administrators group user, who is granted to control the computer, to use this product.
- New functions of Windows® XP
  Note that this product may not operate correctly when any of the following new functions of Microsoft® Windows® XP Professional and Microsoft® Windows® XP Home Edition is used, as they are unsupported.
    Compatibility mode (The application supported by earlier version of Windows is run using this mode.)
    Fast user switching
    Remote desktop
    Desktop themes change (Larger font is selected.)
- Personal computer setting for MELSOFT connection
  When terminating the access to the PLC CPU through MELSFOT connection, it may take time until the MELSFOT connection screen is closed. In this case, consult with the personal computer administrator and take either of the following actions, as this may close the screen in a shorter time.

  (Action 1)
  Close the most unnecessary one among the running application software.

  (Action 2)
  Make the settings in order to increase the virtual memory of personal computer according to the following procedure.

  [Procedure]….In the case of Microsoft® Windows® 2000 Professional
  (1) Select "System" in the control panel.
  (2) The system property screen appears.
  Click Performance options within <<Advanced>>.
  (3) The performance options screen appears.
  Click Change of "Virtual memory".
  (4) The virtual memory screen appears.
  Change the "Initial size" and "Maximum size" to larger value.
  (5) Click on Set button.

  After the settings are made, the virtual memory of personal computer is increased.

3 MAIN FUNCTIONS

The following explains functions for "Monitor", "Investigation/Confirmation" and "Recovery", and other useful functions.

Monitor..... Always monitors system status using alarm notification, error diagnostics or other functions

Investigation/Confirmation .... Investigates/Confirms system status using diagnostics, monitor, analysis or similar functions.

Recovery ..... Performs program change (download to PLC), device data change and others.

(1) Useful functions for monitoring

Function		Description	Reference
Monitor	Alarm notification	Notifies of error occurrence and the analysis, diagnostics results by e-mail.	Section 9.12
	Error diagnostics	Displays the error of the target PLC CPU based on the error condition defined by the user.	Section 9.7
	PLC diagnostics	Executes the diagnostics of the target PLC CPU.	Section 9.9
	Analysis	Executes the analysis of the target PLC CPU operation (order check, count check, failure (normal/faulty) check, high/low limit value check) and displays the analysis results.	Section 9.8

(2) Useful functions for investigation/confirmation

Function		Description	Reference
Investigation /Confirmation	PLC status monitor	Displays the PLC CPU operation status and program list.	Section 9.1
	Device monitor	Simultaneously monitors devices for multiple PLC CPUs.	Section 9.2
	Timing chart	Displays the timing chart of the specified device.	Section 9.3
	Trace	Executes sampling trace for the specified device.	Section 9.4
	Ladder monitor	Investigates the ON/OFF cause for ladder monitor and device.	Section 9.5
	PLC diagnostics	Diagnoses the target PLC CPU.	Section 9.9
	Network diagnostics	Diagnoses MELSECNET/H, CC-Link, Ethernet or other networks.	Section 9.10
	System monitor	Display the system configuration, each module error status and history.	Section 9.11
	Alarm notification	Notifies of error occurrence and the analysis, diagnostics results by e-mail.	Section 9.12
	Error diagnostics	Displays the error of the target PLC CPU based on the error condition defined by the user.	Section 9.7
	Analysis	Executes the analysis of the target PLC CPU operation (order check, count check, failure (normal/faulty) check, high/low limit value check) and displays the analysis results.	Section 9.8
	Device test	Tests the specified device. (Simultaneous test of all specified devices.)	Section 10.2

(3) Useful functions for recovery

Function		Description	Reference
Recovery	Upload from PLC/Download to PLC	Reads/Writes project data (Maintenance)	Chapter 7
	FTP site	Reads project data via the FTP site	Section 7.13.
	Replacing module online (Hot swapping)	Replaces a module without stopping the system when the module is faulty.	Section 9.11.1

(4) Other useful functions

Function		Description	Reference
File operation	Import/Export	Imports/Exports access data name, operation analysis, Error diagnostics name or other data.	Section 6.6
Project operation	FTP site	Reads from/Writes to files through the FTP site connection.	Section 7.1.3
	PLC batch operation	Multiple project data can be simultaneously uploaded from/downloaded to multiple PLC CPUs. This function is available by relating target PLCs and projects by name in advance.	Section 7.8
	Relating a target name and a project	Relates target PLCs and projects by name. This setting is useful for "PLC batch operation".	Section 7.9
	Backup	Backs up data of specified projects.	Section 7.15
	Restore	Restores backed up projects.	Section 7.16
	Backup arrangement	Deletes the project specified from the backed up projects.	Section 7.17
Connection target specifications	Network configuration analysis specification	Specify the analysis target, i.e., network that includes the connection target station.	Section 8.1
	Connection Target Name	Saves the PLC CPU to be accessed and the path as name.	Section 8.2
	Access data name	Groups devices to save the group as any name.	Section 8.3
	MELSOFT connection	Internet/Intranet settings.	Section 8.4
Tool	Easy menu	Registers frequently-used functions to execute them by using one button.	Section 11.1.1
	Option	Changes the settings for project display, network configuration information and online change.	Section 11.1.2
	Security setting	Settings for illegal access prevention	Section 11.1.3
	Operation log	Collects and saves the operation history including start of this product to operation termination.	Section 11.1.4
	Auto-start setting	Settings for auto start of this product or specified functions at the start of personal computer.	Section 11.1.5

3 - 2

4 INSTALLATION AND UNINSTALLATION

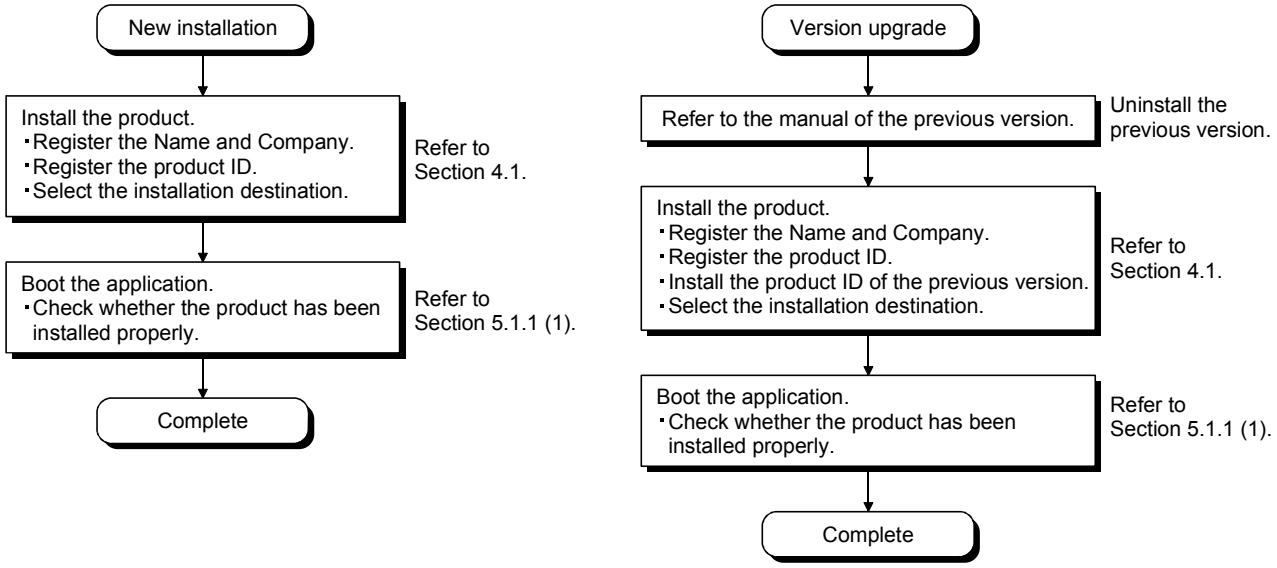
This chapter describes the installation and uninstallation of this product.

4.1 Installation

This section explains the installation procedure and operation of this product.

(1) Installation procedure

Install this product in the following procedure.


New installation
Install the product.
・Register the Name and Company.
・Register the product ID.
・Select the installation destination.
Refer to Section 4.1.
Boot the application.
・Check whether the product has been installed properly.
Refer to Section 5.1.1 (1).
Complete
Version upgrade
Refer to the manual of the previous version.
Uninstall the previous version.
Install the product.
・Register the Name and Company.
・Register the product ID.
・Install the product ID of the previous version.
・Select the installation destination.
Refer to Section 4.1.
Boot the application.
・Check whether the product has been installed properly.
Refer to Section 5.1.1 (1).
Complete

POINT

- When a message appears to confirm if each DLL will be overwritten at the time of installation, Click Yes button to execute the overwrite of DLL. If DLL is not overwritten, the product may not be executed correctly.
- When using upgraded version (SW2D5C-EXP-JV or later) of the product, make sure to uninstall the older version (SW1D5C-EXP-J).
  If the older version is not uninstalled, unnecessary data will remain.

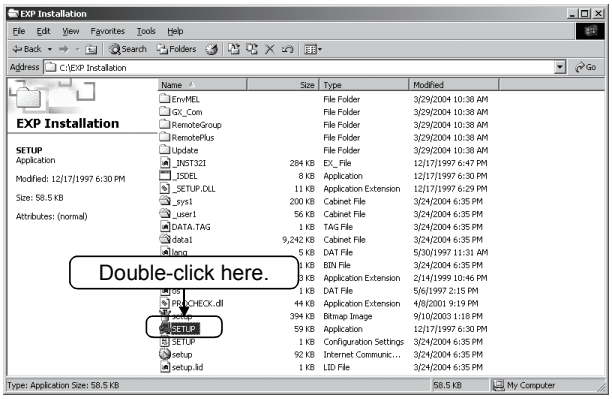
(2) Installation of this product

Check the following before starting installation.

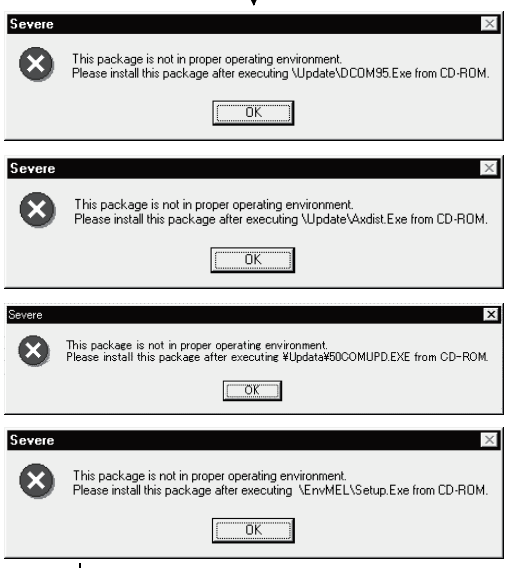
POINT

- Before starting installation, close all other applications that are running on Windows® .
- When using Windows NT® Workstation 4.0 or Windows® 2000 Professional, log on as a user who has the attributes of an administrator (for computer management).

Installing the product (The screen is that of Windows® 2000.)



1) Boot Windows® Explorer and click the drive where the disk is inserted.
Double-click "Setup.exe".
In the case of Windows® 2000 Professional, right-click [Start] and select [Explorer].


Severe
This package is not in proper operating environment.
Please install this package after executing \Update\DCOM95.Exe from CD-ROM.
OK
Severe
This package is not in proper operating environment.
Please install this package after executing \Update\Axdist.Exe from CD-ROM.
OK
Severe
This package is not in proper operating environment.
Please install this package after executing ¥Updata¥50COMUPD.EXE from CD-ROM.
OK
Severe
This package is not in proper operating environment.
Please install this package after executing \EnvMEL\Setup.Exe from CD-ROM.
OK

2) If either of the following messages appears, perform operation as shown below.

If the left screen appears, perform operation according to the instruction (a) given in "When a message appears at start of installation".

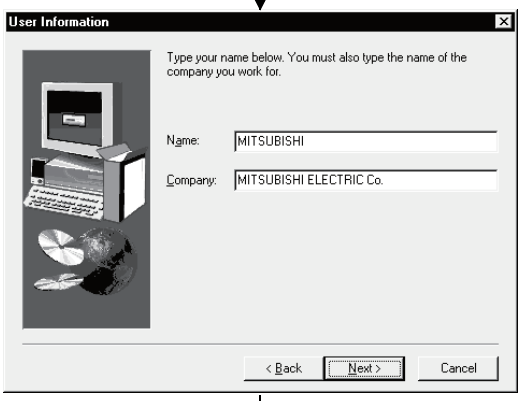
If the left screen appears, perform operation according to the instruction (b) given in "When a message appears at start of installation".

If the left screen appears, perform operation according to the instruction (c) given in "When a message appears at start of installation".

If the left screen appears, perform operation according to the instruction (d) given in "When a message appears at start of installation".

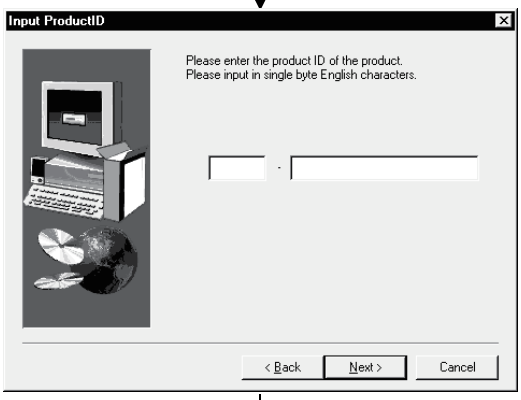
(To the next page)

(From the previous page)



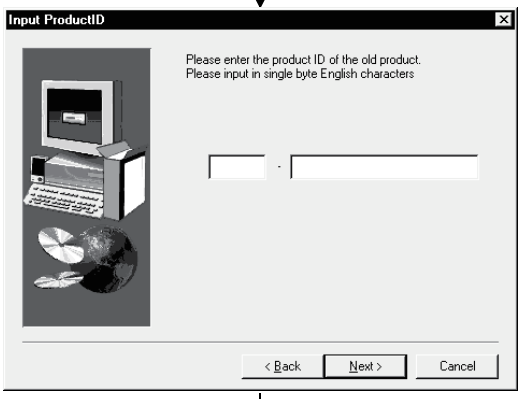
3) Type the name and company, and click Next>.

As the confirmation dialog box appears, follow the message and perform operation.



4) Enter the product ID and click Next>.

The product ID is described on the "License agreement" included in the product.

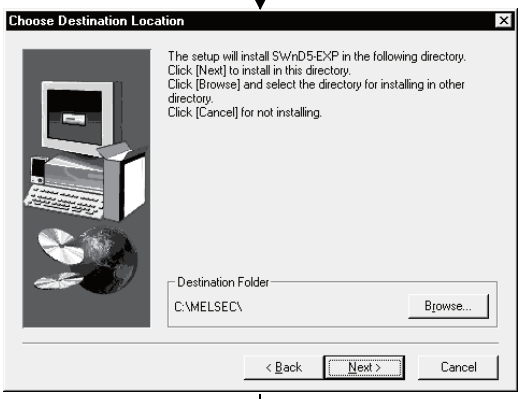


5) The left screen is for version upgrade.

Enter the product ID of the older version and click Next>.

The product ID is described on the "Software Registration Card" or "License agreement" included in the older product.

When newly installing the product, the following screen will not appear.


Choose Destination Location
The setup will install SWnD5-EXP in the following directory.
Click [Next] to install in this directory.
Click [Browse] and select the directory for installing in other directory.
Click [Cancel] for not installing.
Destination Folder
C:\MELSEC\
Browse...
< Back
Next >
Cancel

6) Specify the installation destination folder.

Click Next> if the destination folder displayed is OK.

To change the folder, click Browse and specify a new drive and folder.

(To the next page)

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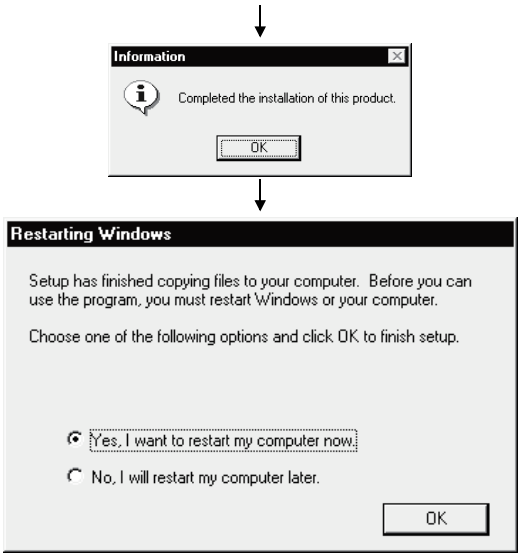
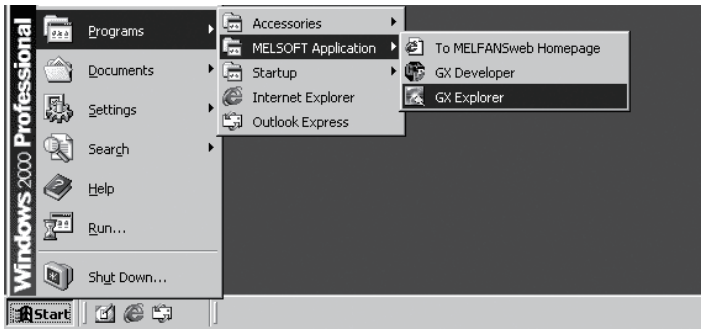
(From the previous page)


Information
Completed the installation of this product.
OK
Restarting Windows
Setup has finished copying files to your computer. Before you can use the program, you must restart Windows or your computer.
Choose one of the following options and click OK to finish setup.
Yes, I want to restart my computer now.
No, I will restart my computer later.
OK

7) This completes installation.
Click OK.

8) If the screen shown on the left appears, you need to reboot Windows® .

The icon of the product is registered after installation is completed.



When a message appears at start of installation

In some cases, a message may appear at installation of the product, resulting in the installation failure.
If this occurs, make sure to close all running applications, and carry out either of the operations (a) to (d).

(a) Supported operating system

The product does not support Windows® 95.
Reinstall the product into the personal computer in which the supported operating system has been installed.

(b) Installation of Axdist.exe

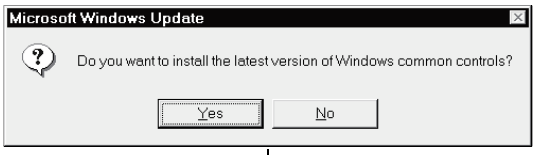
This section explains the updating operation of Windows® using "Update\Axdist.exe" on the CD-ROM.
Execute Axdist.exe provided for this product.
Install this product after executing the exe file and restarting the IBM-PC/AT compatible.
The exe file to be executed on the corresponding operating system is indicated below.

Supportrd operating system	File name
Microsoft® Windows® 98 Operating System Microsoft® Windows NT® Workstation Operating System Version 4.0	Axdist.exe

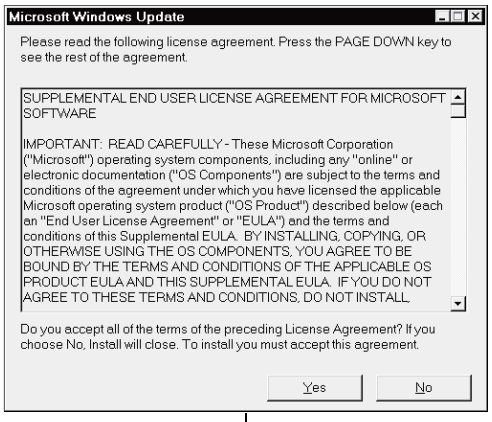
(Axdist.exe are in the "Update" folder on CD-ROM.)

(c) Installation of 50comupd.exe

This section explains the updating operation of Windows® using "Update\50comupd.exe" on the CD-ROM.



1) Click the Yes button to start updating Windows.


Microsoft Windows Update
Please read the following license agreement. Press the PAGE DOWN key to see the rest of the agreement.
SUPPLEMENTAL END USER LICENSE AGREEMENT FOR MICROSOFT SOFTWARE
IMPORTANT: READ CAREFULLY - These Microsoft Corporation ("Microsoft") operating system components, including any "online" or electronic documentation ("OS Components") are subject to the terms and conditions of the agreement under which you have licensed the applicable Microsoft operating system product ("OS Product") described below (each an "End User License Agreement" or "EULA") and the terms and conditions of this Supplemental EULA. BY INSTALLING, COPYING, OR OTHERWISE USING THE OS COMPONENTS, YOU AGREE TO BE BOUND BY THE TERMS AND CONDITIONS OF THE APPLICABLE OS PRODUCT EULA AND THIS SUPPLEMENTAL EULA. IF YOU DO NOT AGREE TO THESE TERMS AND CONDITIONS, DO NOT INSTALL.
Do you accept all of the terms of the preceding License Agreement? If you choose No, Install will close. To install you must accept this agreement.
Yes
No

2) Accept the agreement on the left screen and click the Yes button.

Microsoft Windows Update
You must restart your computer before the new settings will take effect.
Do you want to restart your computer now?
Yes
No

3) Click Yes to restart.

After a restart, perform the installation operation in (2) 1).

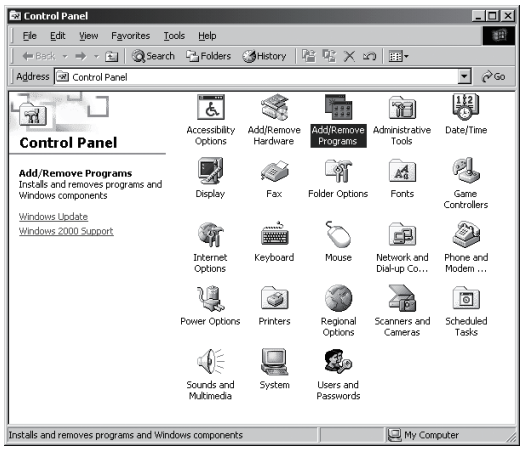
(d) Installation of EnvMEL

Execute Setup.exe in the "EnvMEL" folder on this product CD-ROM. Install this product after executing the "Setup exe". If this product is not installed properly at this time, reboot the personal computer.

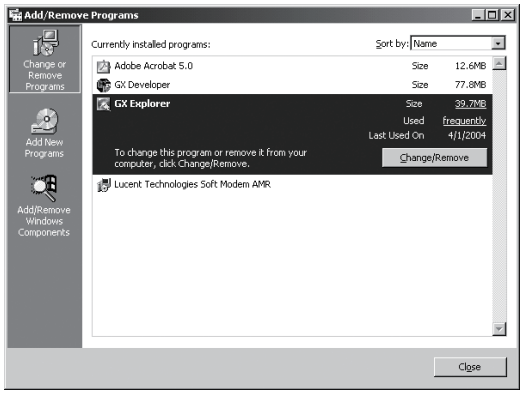
4.2 Uninstallation

This section provides the operation to delete this product from the hard disk.

Uninstalling the product

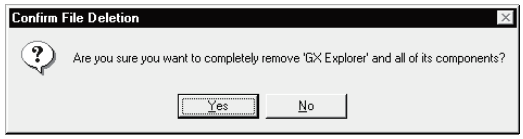


1) Choose [Start] - [Setting] - [Control Panel].
Choose and double-click "Add/Remove Programs" in the Control Panel.



2) Choose "GX Explorer".
After making selection, click Add/Remove.
The screen shown on the left is that of Windows® 2000 Profeeional.
The displayed screen varies with the OS.

When using Windows® 2000 Professional, perform the following operation.
(a) Click Change or Remove Programs.
(b) Choose "GX Explorer".
(c) Click Change/Remove.

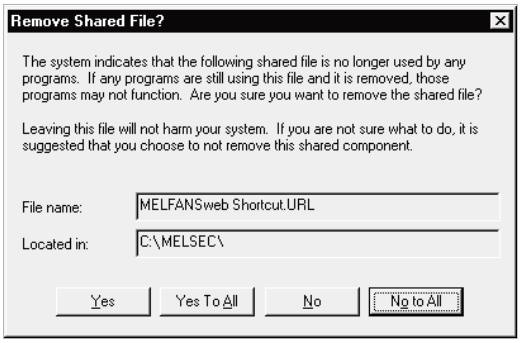


3) Check whether you will romove the software package or not.
When uninstalling it, click Yes.
Uninstallation starts.
When not uninstalling it, click No.
This returns to the preceding screen.

* Components indicate the icons and files installed.

(To the next page)

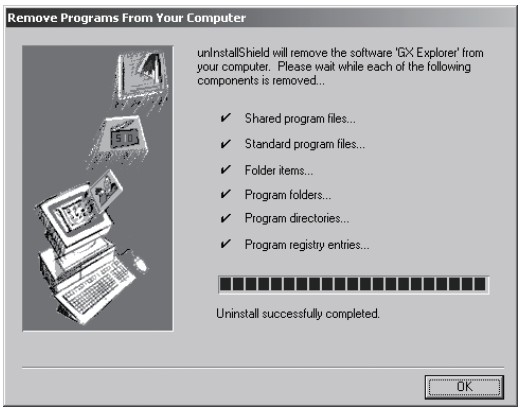
(From the previous page)


Remove Shared File?
The system indicates that the following shared file is no longer used by any programs. If any programs are still using this file and it is removed, those programs may not function. Are you sure you want to remove the shared file?
Leaving this file will not harm your system. If you are not sure what to do, it is suggested that you choose to not remove this shared component.
File name:
MELFANSweb Shortcut.URL
Located in:
C:\MELSEC\
Yes
Yes To All
No
No to All

4) If the left screen has appeared, click the No To All button.

If you click the Yes or Yes To All button, the shared file of the Windows® compatible MELSOFT product is removed. Therefore, click the No To All button when removing this product only.

POINT
If files common to MELSOFT products are deleted, a MELSOFT product may be unusable.


Remove Programs From Your Computer
unInstallShield will remove the software 'GX Explorer' from your computer. Please wait while each of the following components is removed...
Shared program files...
Standard program files...
Folder items...
Program folders...
Program directories...
Program registry entries...
Uninstall successfully completed.
OK

5) Click OK when the message indicating that removing operation is finished appears.

When the finished message appears, uninstallation is complete.

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4.3 Installing the USB Driver

When Windows® 2000 Professional, Windows® XP Professional and Windows® XP Home Edition is used, the USB driver must be installed to make CPU USB communication.
The following is the USB driver installation procedure.

POINT

If the USB driver cannot be installed, check the following setting.

- When Windows® 2000 Professional is used
  If you have selected "Block-Prevent installation of unsigned files" after [Control Panel] - [System] - [Hardware] - [Driver Signing], the USB driver may not be installed.
  Choose "Ignore-Install all files, regardless of file signature" or "Warn-Display a message before installing an unsigned file" for [Driver Signing], and install the USB driver.
- When Windows® XP Professional or Windows® XP Home Edition is used
  If you have selected "Block-Never install unsigned driver software" after [Control Panel] - [System] - [Hardware] - [Driver Signing], the USB driver may not be installed.
  Choose "Ignore-Install the software anyway and don't ask for my approval" or "Warn-Prompt me each time to choose an action" for [Driver Signing], and install the USB driver.

[1] When Windows® 2000 Professional is used

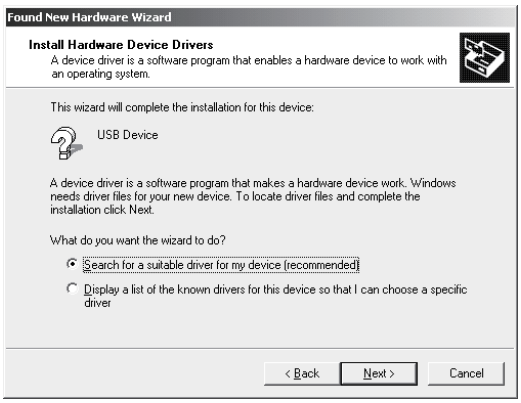
The following indicates the procedure for installing the USB driver when using Windows® 2000 Professional.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install a device driver for a hardware device.
To continue, click Next.
< Back
Next >
Cancel

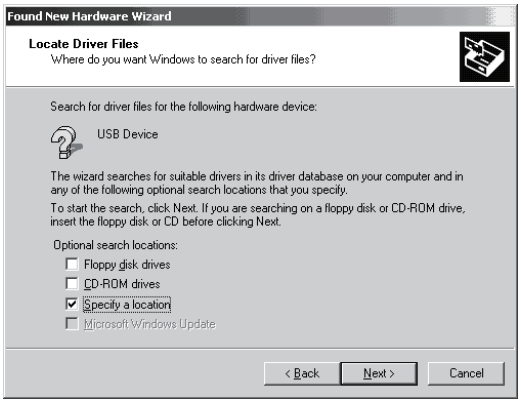
1) The screen shown on the left appears when you connect the personal computer and QCPU (Q mode) by the USB cable.
   Click the Next>.

(To the next page)

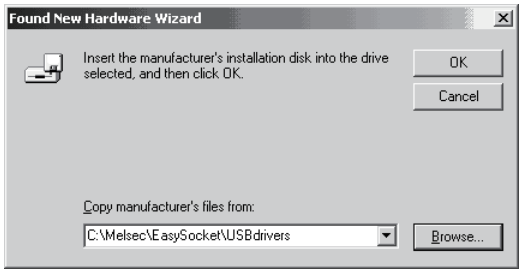
(To the previous page)


Found New Hardware Wizard
Install Hardware Device Drivers
A device driver is a software program that enables a hardware device to work with an operating system.
This wizard will complete the installation for this device:
USB Device
A device driver is a software program that makes a hardware device work. Windows needs driver files for your new device. To locate driver files and complete the installation click Next.
What do you want the wizard to do?
Search for a suitable driver for my device (recommended)
Display a list of the known drivers for this device so that I can choose a specific driver
< Back
Next >
Cancel

2) Choose "Search for a suitable driver for my device (recommended)" and click the Next>.


Found New Hardware Wizard
Locate Driver Files
Where do you want Windows to search for driver files?
Search for driver files for the following hardware device:
USB Device
The wizard searches for suitable drivers in its driver database on your computer and in any of the following optional search locations that you specify.
To start the search, click Next. If you are searching on a floppy disk or CD-ROM drive, insert the floppy disk or CD before clicking Next.
Optional search locations:
Floppy disk drives
CD-ROM drives
Specify a location
Microsoft Windows Update
< Back
Next >
Cancel

3) Check "Specify a location" and click the Next>.



4) As the screen on the left appears, set this product installation destination "Easysocket\USBdrivers" and click the OK.

The screen shown on the left shows the example of setting C:\MELSEC\Easysocket\USBdrivers.
If volume MELSOFT products have been installed, browse the installation destination of the first product.

Found New Hardware Wizard
Completing the Found New Hardware Wizard
MITSUBISHI Easysocket Driver
Windows has finished installing the software for this device.
To close this wizard, click Finish.
< Back
Finish
Cancel

5) The screen on the left appears to indicate completion of installation.
Click the Finish to terminate installation.

(Completion)

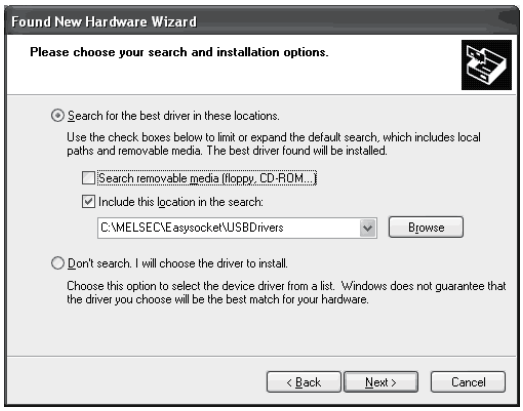
4 - 9

[2] When Windows® XP Professional and Windows® XP Home Edition is used

The following indicates the procedure for installing the USB driver when using Windows® XP Professional or Windows® XP Home Edition.

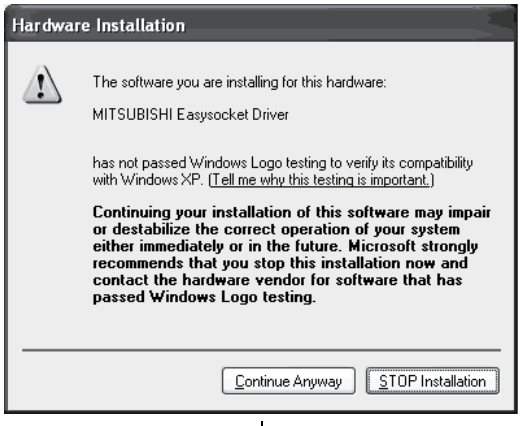
Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
USB Device
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

1) The screen shown on the left appears when you connect the personal computer and QCPU (Q mode) by the USB cable.
Choose "Install from a list or specific location [Advanced]" and click the Next>.


Found New Hardware Wizard
Please choose your search and installation options.
Search for the best driver in these locations.
Use the check boxes below to limit or expand the default search, which includes local paths and removable media. The best driver found will be installed.
Search removable media (floppy, CD-ROM...)
Include this location in the search:
C:\MELSEC\Easysocket\USBDrivers
Browse
Don't search. I will choose the driver to install.
Choose this option to select the device driver from a list. Windows does not guarantee that the driver you choose will be the best match for your hardware.
< Back
Next >
Cancel

2) As the screen on the left appears, choose "Include this location in the search".
Check "Include this location in the search" and set "Easysocket\USBDrivers" of the folder where this product was installed.
After setting, click the Next>.

The screen shown on the left shows the example of setting C: \MELSEC\Easysocket\USBDrivers.
If volume MELSOFT products have been installed, browse the installation destination of the first product.


Hardware Installation
The software you are installing for this hardware:
MITSUBISHI Easysocket Driver
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

3) As the screen on the left appears, click the Continue Anyway.

REMARK

Though the screen on the left appears during installation of the USB driver, we have confirmed that the USB driver operates properly using Windows® XP Professional or Windows® XP Home Edition.
(No problem will occur after installation of the USB driver.)
Click Continue Anyway to continue the installation of the USB driver.

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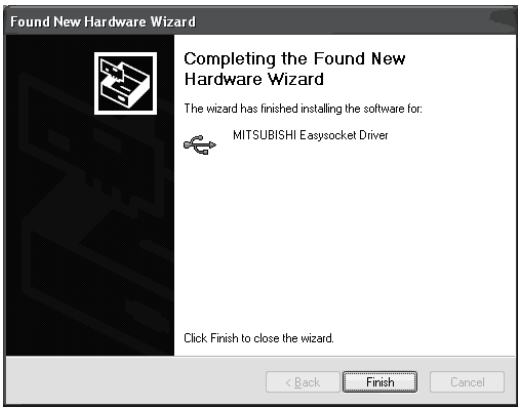


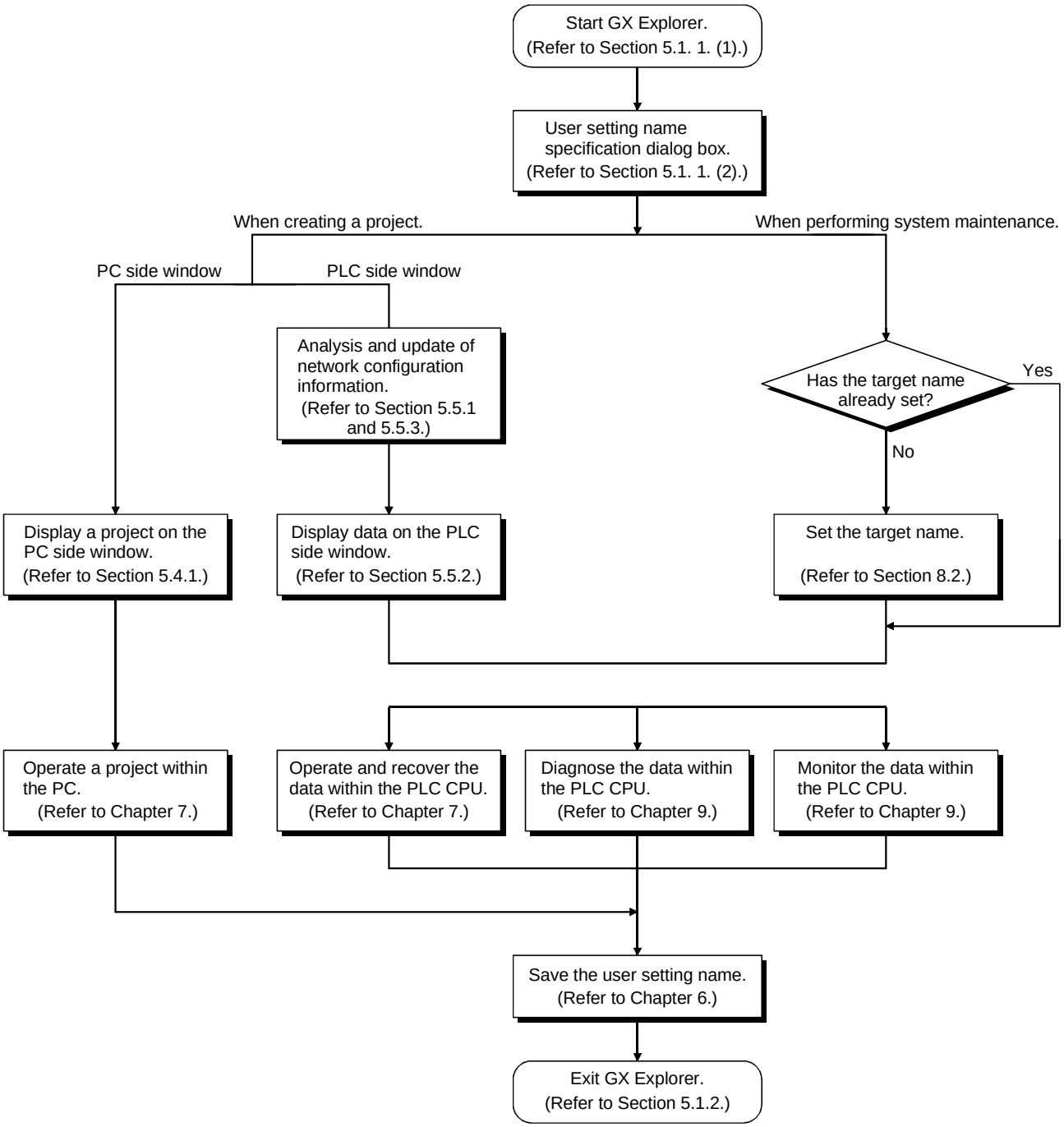
(Completion)

4) The screen on the left appears to indicate completion of installation.
Click the Finish to terminate installation.

4 - 11

5 BASIC OPERATIONS

The following outlines the GX Explorer operation.

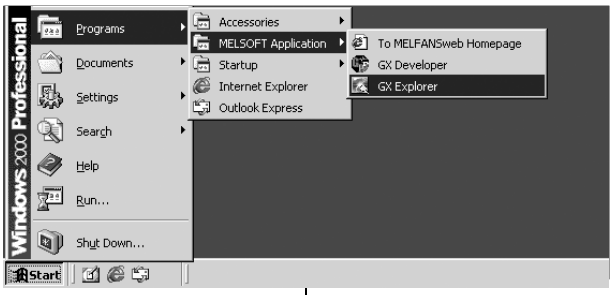

Start GX Explorer.
(Refer to Section 5.1. 1. (1).)
User setting name specification dialog box.
(Refer to Section 5.1. 1. (2).)
When creating a project.
When performing system maintenance.
PC side window
PLC side window
Analysis and update of network configuration information.
(Refer to Section 5.5.1 and 5.5.3.)
Has the target name already set?
Yes
No
Display a project on the PC side window.
(Refer to Section 5.4.1.)
Display data on the PLC side window.
(Refer to Section 5.5.2.)
Set the target name.
(Refer to Section 8.2.)
Operate a project within the PC.
(Refer to Chapter 7.)
Operate and recover the data within the PLC CPU.
(Refer to Chapter 7.)
Diagnose the data within the PLC CPU.
(Refer to Chapter 9.)
Monitor the data within the PLC CPU.
(Refer to Chapter 9.)
Save the user setting name.
(Refer to Chapter 6.)
Exit GX Explorer.
(Refer to Section 5.1.2.)

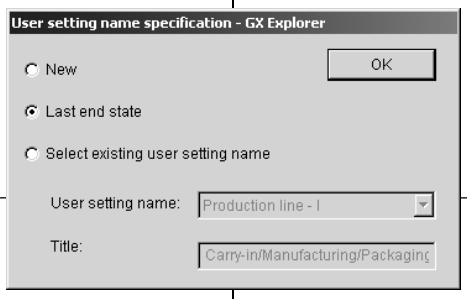
5 - 1

5.1 Starting and Exiting

5.1.1(1) Starting

The following is a sequence of operations for starting GX Explorer.

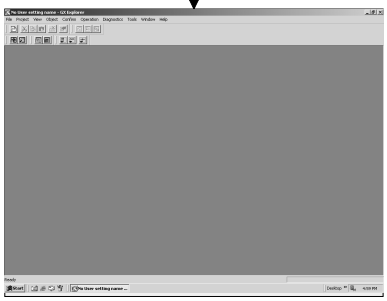




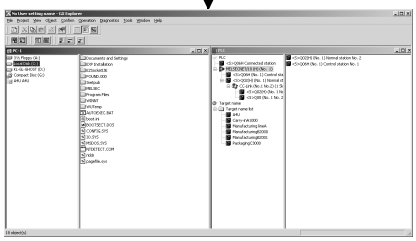
When "New" is selected.

When "Last end state" is selected.

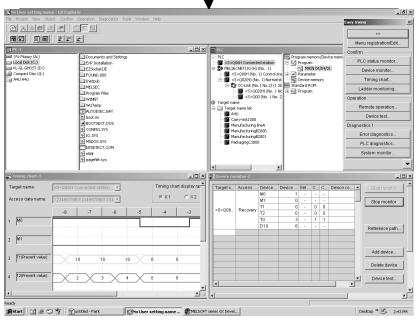
When "Select existing user setting name" is selected.



The initial screen appears that does not include saved data, PC side window or PLC side window.



The screen appears the same as when the last operation was ended.



The screen appears the same as the user setting name was saved.

POINT

- "User setting name specification" dialog box appears when GX Explorer is started.
  When selecting "Last end state" or "Select existing user setting name" on the dialog box, a dialog box appears to confirm if the network configuration information will be updated, if GX Explorer was ended with PLC side window open at the previous operation.
  Select [OK] to analyze the new network configuration and update the information.
  Select [Cancel] to display the previous information.
  If the previous network configuration information has not been previously set, "Not yet retrieved" will be displayed

5.1.1 (2) User setting name specification

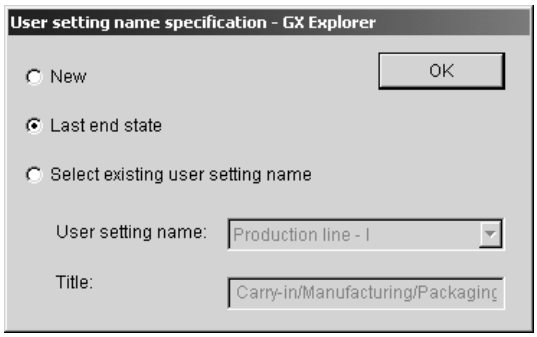
[Purpose]

Specify the first operation screen of GX Explorer.

[Operation Procedure]

"User setting name specification" dialog box appears when GX Explorer is started.

[Setting Screen]



[Setting Item]

1) New

Displays the initial screen, which does not include PC side window or PLC side window.

2) Last end state

Displays the screen the same as when the last operation was ended.

3) Select existing user setting name

Select an existing user setting name.

Displays the screen the same as the user setting name was saved.

4) User setting name

If "Select existing user setting name" is selected, select a user setting name from the combo box.

5) Title

Displays the title corresponding to the selected user setting name.

6) OK button

Displays the screen according to the selected option 1, 2 or 3.

POINT

- "User setting name specification" dialog box appears when GX Explorer is started.
  If "User setting name input" has been set in "Security setting", only option 3, "Select existing user setting name" is selectable. In this case, " " appears in "User setting name specification" dialog box.
  For details of "Security setting", refer to Section 11.1.3.

5.1.2 Exiting

There are the following methods to exit from GX Explorer.

- Click the [File] - [Exit] menu.
- Click on the left of the title bar and click the [Close] menu.
- Click on the right of the title bar.
- Press the shortcut keys Alt + F4.

POINT

- Prior to end of GX Explorer, a dialog box appears to confirm if the setting will be registered as a user setting name.
  If registered once, the user setting name can be selected by checking "Select existing user setting name" in "User setting name specification" dialog box from the next time on; the operation can be started with the same setting as saved.
  For each operation of user setting name, refer to Section 6.1 and later.

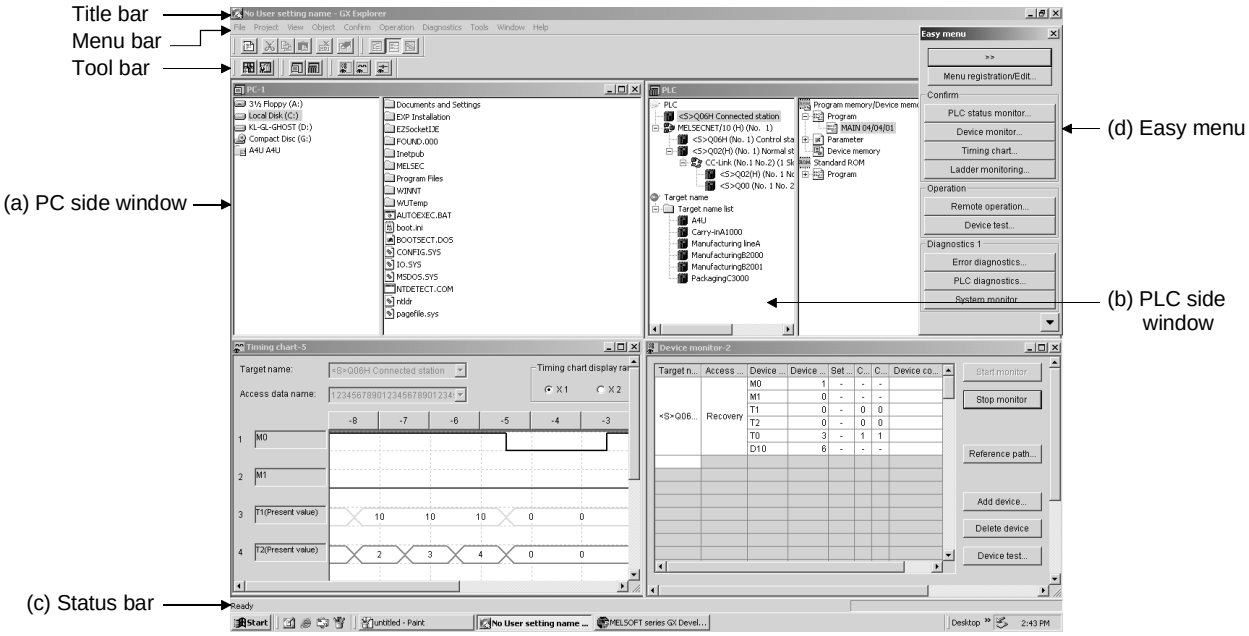
5.2 Screen Layout

5.2.1 Screen layout

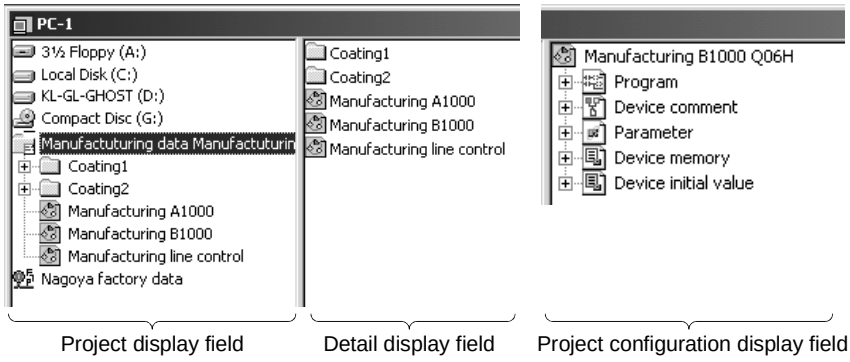
The following shows the screen layout and common operations of GX Explorer.

(1) Screen layout

This section explains the screen layout and common operations of GX Explorer.

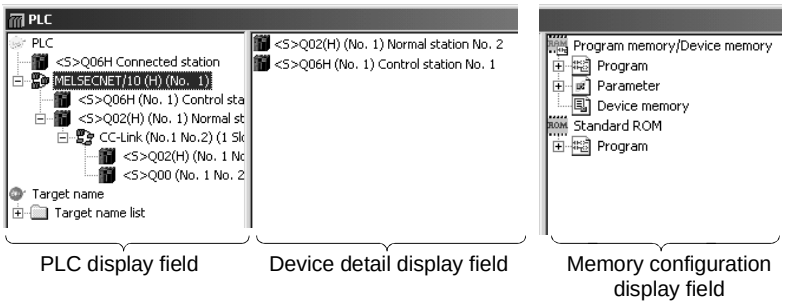


(a) PC side window



- Project display field
  Drives, folders, projects and files within a personal computer are displayed in tree format.
- Detail display field
  When a drive or folder is selected in Project display field, objects (folders, projects or files) within the selected drive or folder are displayed.
- Project configuration display field
  Data within a project are displayed in tree format.
  This is relevant only when category data (data type and data name) are displayed in Detail display field.

(b) PLC side window



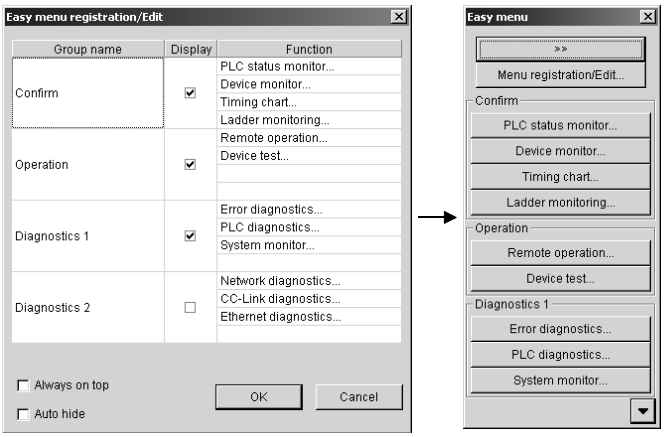
- PLC display field
  The network configuration of the connected station is displayed in tree format.
- Device detail display field
  When a network type is selected in PLC display field, stations connected to the selected network are displayed.
  When a station is selected in PLC display field, the memory (drive) configuration and stored data of the selected station are displayed in tree format.
- Memory configuration display field
  Data within the selected PLC CPU are displayed in tree format.
  This is relevant only when category data (data type and data name) are displayed in Device detail display field.

(c) Status bar

GX Explorer status information is displayed.

(d) Easy menu

Frequently-used functions can be set as Easy menu. This setting eliminates the time to find the target function from tool bar or menu bar, and enables each function to be started by using one button.
For details of Easy menu, refer to Section 11.1.1 (2).



(e) Other function window display examples

Each function window is displayed when the PLC system is maintained.
In this section, timing chart and ladder monitor execution window are displayed as examples.
For details of maintenance function, refer to Chapter 9 and 10.

(2) Common operation

Purpose	Operation
Switch between displaying and hiding the toolbar.	[View] – [Toolbar] menu
Switch between displaying and hiding the status bar.	[View] – [Status bar] menu
Moves the selected item up one layer.	[View] – [Move up] menu
Displays the target data in list format.	[View] – [List] menu
Displays details of the target data.*1	[View] – [Details] menu
Displays details of the project data configuration.	[View] – [Project configuration] menu
Arranges the displayed items when displaying the project list or system configuration diagram.	[View] – [Icon arrangement] – [Name order] menu
	[View] – [Icon arrangement] – [Type order/Station number order] menu
	[View] – [Icon arrangement] – [Size order] menu
	[View] – [Icon arrangement] – [Date order] menu
Updates the information.*2	[View] – [Refresh] menu
Open the PC side window.	[Window] – [Open PC side window] menu
Open the PLC side window.	[Window] – [Open PLC side window] menu
Immediately accesses the specified function.	[Window] – [Open easy menu] menu
Close the active window.	[Window] – [Close] menu
Close all open windows.	[Window] – [All Close] menu
Display the windows one over another partially.	[Window] – [Cascade] menu
Display the windows side by side.	[Window] – [Tile Vertically] menu
Display the windows top to bottom.	[Window] – [Tile Horizontally] menu

*1: When details of the target data is displayed, the following items appear depending on the selected object.

PC side window: Name, PLC type, Size, Type, Update date, Attributes

PLC side window: Name, PLC type, Connection route, Network No., Station No., PLC No.

Available attributes: R (Read only), H (Hidden file), S (System), A (Archive)

*2: The information will be automatically updated by displaying other layer, too.

5.2.2 Menu list

(1) GX Explorer drop-down menus

Menu	Item		Description	Button	Reference
File	New user setting name		User setting name-relevant operations.		Section 6.1
	Open user setting name				Section 6.2
	Save user setting name				Section 6.3
	Save user setting name as				Section 6.4
	Delete user setting name				Section 6.5
	Import/Export		Reads/Writes setting data of each function.		Section 6.6
	Open network configuration information		Network configuration information-relevant operations.		Section 6.7
	Save network configuration information				Section 6.8
	Save network configuration information as				Section 6.9
	Delete network configuration information				Section 6.10
	Exit		Exits GX Explorer.		–
Project	New	System data	Displays the system data creation screen.		Section 7.1.1
		Folder	Creates a new folder.		Section 7.1.2
		FTP site	Displays the FTP server connection setting screen.		Section 7.1.3
	Cut		Places the target data on the clipboard.		Section 7.2
	Copy		Copies the target data onto the clipboard.		Section 7.3
	Paste		Pastes the data from the clipboard.		Section 7.2
	Select all		Selects all displayed items.		Section 7.4
	Upload from PLC		Displays the setting screen for "Upload from PLC".		Section 7.5
	Download to PLC		Displays the setting screen for "Download to PLC".		Section 7.6
	PLC data deletion		Deletes the specified data within the target PLC CPU.		Section 7.7
	PLC batch operation		Displays the batch operation screen for data within the PLC CPU.		Section 7.8
	Inter-connect Target name and Project		Displays the screen for relating the target PLC and project.		Section 7.9
	Keyword	Keyword registration	Displays the screen for registering a keyword and password.		Section 7.10.1
		Keyword delete	Displays the screen for deleting a keyword and password.		Section 7.10.2
	Search		Displays the setting screen for project search.		Section 7.11
	Consistency check		Displays setting screen for checking the consistency of projects, parameters and comments.		Section 7.12
	Rename		Renames the project.		Section 7.13
	Delete		Deletes the project.		Section 7.14
	Backup		Backs up the target data.		Section 7.15
	Restore		Displays the restore screen.		Section 7.16

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Menu	Item		Description	Button	Reference
Project	Backup arrangement		Displays backup data in list format.		Section 7.17
	Run relevant application		Start the corresponding MELSOFT applications.		Section 7.18
	Property		Displays the property information.		Section 7.19
View	Toolbar		Displays the customize setting screen for toolbar.		Section 5.2.1
	Status bar		Selects whether status bar will be displayed or not.		
	Move up		Moves the cursor up one layer.		
	List		Displays the target data in list format.		
	Details		Displays details of the target data.		
	Project configuration		Displays details of the project data.		
	Icon arrangement	Name order	Arranges the displayed items when displaying the project list or system configuration diagram.		
		Type order/Station number order			
		Size order			
		Date order			
	Refresh		In the case of PC side window, the file information is updated. In the case of PLC side window, the network configuration information is updated.		
Object	Network configuration analysis specification		Displays the screen for specifying the analysis target, i.e., network configuration.		Section 8.1
	Connection Target name		Displays the setting screen for target PLC and connection route.		Section 8.2
	Access data name		Displays the setting screen for access data name.		Section 8.3
	Connect to MELSOFT		Displays the setting screen for connecting to GX RemoteService-I via the Internet or Intranet.		Section 8.4
Confirm	PLC Status monitor		Displays the screen for monitoring the PLC CPU status.		Section 9.1
	Device monitor		Displays the screen for executing a device monitor.		Section 9.2
	Timing chart		Displays the screen that provides a timing chart of the specified device.		Section 9.3
	Trace		Displays the screen for trace execution.		Section 9.4
	Ladder monitor	Ladder monitor	Displays the screen for specifying the ladder monitor target.		Section 9.5
		Split display	Splits the ladder monitor screen.		
		Split display cancel	Restores the split ladder monitor screen to a single pane.		
		Device search	Searches for the specified device.		
		Step No. search	Searches for the step No./block No..		
		ON/OFF cause find.	Searches for the device that does not turn ON/OFF.		
	Local device monitor setting		Displays the screen for registering a local device monitor.		Section 9.6

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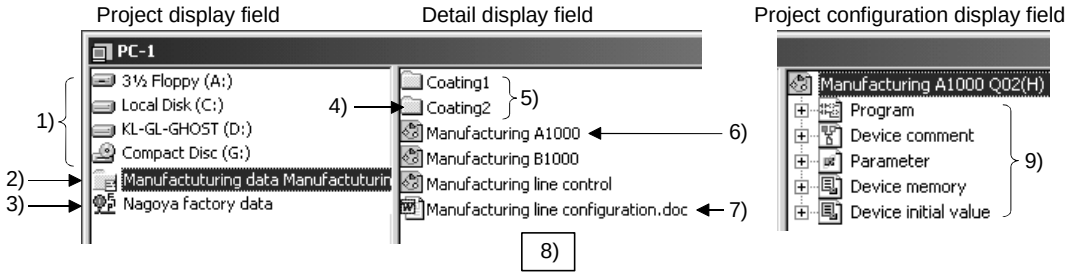
Menu	Item		Description	Button	Reference
Operation	Remote operation		Displays the screen for operating a PLC system in a remote location.		Section 10.1
	Device test		Displays the screen for executing a device test.		Section 10.2
Diagnostics	Error diagnostics		Displays the screen for executing an error diagnostics.		Section 9.7
	Operation analysis		Displays the screen for executing an operation analysis.		Section 9.8
	PLC diagnostics		Displays the screen for executing a PLC diagnostics.		Section 9.9
	Network diagnostics	Network diagnostics	Displays the screen for executing a MELSECNET diagnostics.		Section 9.10
		CC-Link diagnostics	Displays the screen for executing a CC-Link / CC-Link/LT diagnostics.		
		Ethernet diagnostics	Displays the screen for executing an Ethernet diagnostics.		
	System monitor		Displays the screen for executing a system monitor.		Section 9.11
	Alarm notification		Displays the screen for executing an alarm notification.		Section 9.12
Tool	Customize	Toolbar	Displays the customize screen for each function.		Section 11.1.1
		Easy menu			
	Option		Displays the option setting screen.		Section 11.1.2
	Security setting		Displays the security setting screen.		Section 11.1.3
	Operation log		Displays the operation log setting screen.		Section 11.1.4
	Auto-start setting		Displays the auto-start setting screen.		Section 11.1.5
Window	Open PC side window		Displays the PC side window.		Section 5.2
	Open PLC side window		Displays the PLC side window.		
	Open Easy menu		Displays the Easy menu.		
	Close		Each function window-relevant display operation.		
	Close all				
	Cascade windows				
	Tile windows vertically				
	Tile windows horizontally				
Help	Help		Displays the GX Explorer Help.		Section 11.2
	Key operation list		Displays the shortcut key list.		
	CPU error		Displays the PLC CPU error code list.		
	Special relay/Register		Displays the special relay/special register list.		
	Product information		Displays the product information.		
	Connect to MELFANS web		Connects to MELFANS web.		

(2) GX Explorer right-click menu

Right-click menus differ with the cursor position as shown below

(a) PC side window



Cursor position	Function displayed		Description
1) Drive name	New	System data	Displays the system data creation screen.
	Search		Searches for a project.
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position.
	Backup		Backs up the project data within the specified drive.
	Property		Displays the drive property.
2) System data	Search		Searches for a project.
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position.
	Delete		Deletes the target folder.
	Rename		Renames the folder.
	Backup		Backs up the project data within the specified folder.
	Property		Displays the folder property.
3) FTP site	Search		Searches for a project.
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position.
	Delete		Deletes the target FTP site.
	Property		Displays the FTP site property.
4) Folder	New	System data	Displays the system data creation screen.
	Search		Searches for a project.
	Cut		Places the target data on the clipboard.
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position.
	Delete		Deletes the target folder.
	Rename		Renames the folder.
	Backup		Backs up the project data within the specified folder.
	Property		Displays the folder property.

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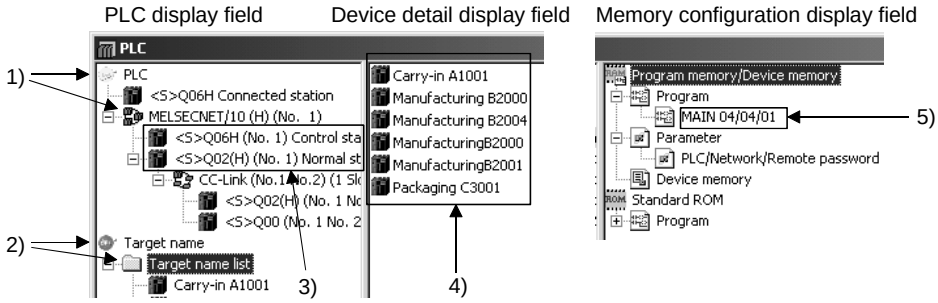
Cursor position	Function displayed		Description
5) Multiple general-purpose file names/multiple folder names/multiple project names	Cut		Places the target data on the clipboard.
	Copy		Copies the target data onto the clipboard.
	Delete		Deletes the target file.
	Back up		Backs up the project data within the specified folder.
6) Project name 7) General-purpose file name	Run relevant application		Starts the corresponding application. (Not available when "All station project" is selected.)
	View	Project configuration	Displays details of the target project data configuration. (Available only when a project name is selected in the detail display field.)
	Cut		Places the target data on the clipboard. (Available only when any project within "All station project" is selected)
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position. (Not available when a general-purpose file name is selected.)
	Delete		Deletes the target file. (Not available when any project within "All station project" is selected.)
	Rename		Renames the file. (Not available when any project within "All station project" is selected.)
	Back up		Backs up the project including the specified folder. (Available only when a project is selected.)
	Property		Displays the file property.
8) Blank area within the detail display field	New	Folder	Creates a new folder
	View	List	Displays the data within the detail display field in list format.
		Details	Displays details of the data within the detail display field.
	Icon arrangement	Name order	Arranges the data within the detail display field.
		Type order/ Station number order	
		Size order	
		Date order	
	Paste		Pastes the data from the clipboard onto the specified position within the detail display field.
	Property		Displays the property of the inverted item (selected data).
9) Data name displayed in tree format within the project configuration display field	Run relevant application		Starts the corresponding application. For data name, the corresponding data will be displayed.
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position. (Not available when multiple data are selected.)

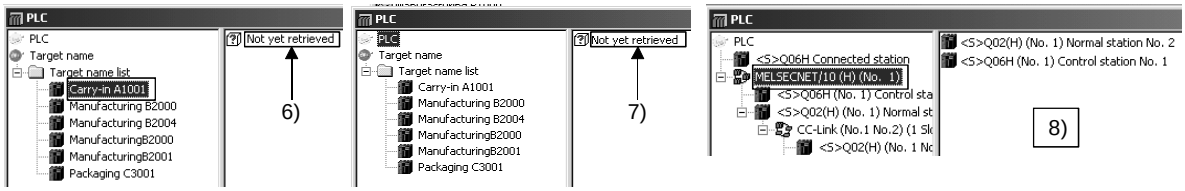
(b) PLC side window



Cursor position	Function displayed		Description
1) PLC, Network name	Refresh		Updates the network configuration information. (Not available when a network name is selected.)
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position.
2) Target name (Root directory/folder)	Paste		Pastes the data from the clipboard onto the specified position.
3) PLC name 4) Target name	Run relevant application		Starts the corresponding application to display the data. (Not available when multiple objects are selected.)
	View	Project configuration	Displays details of the target project data configuration. (Not available when multiple objects are selected/in the PLC display field.)
	Refresh		Updates the data within the target PLC CPU. (Not available when multiple objects are selected.)
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position. (Not available when multiple objects are selected.)
	PLC data deletion		Deletes the target data. (Not available when multiple objects are selected.)
	Target name		Starts the target specification screen while the target PLC CPU is selected. (Not available when multiple objects are selected.)
	Device monitor		Starts the screen for executing a device monitor of the target PLC CPU. (Not available when multiple objects are selected.)
	Timing chart		Starts the screen for executing a timing chart of the target PLC CPU. (Not available when multiple objects are selected.)

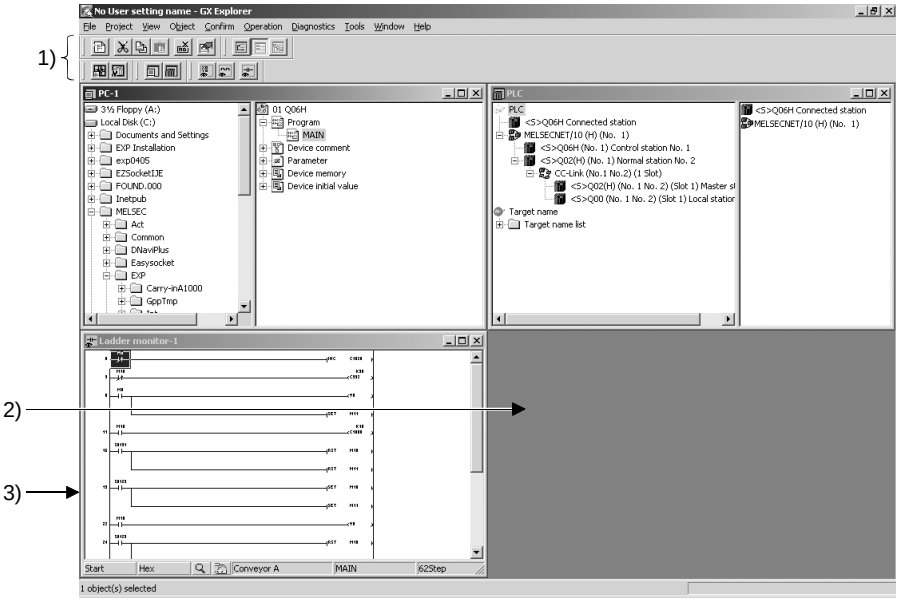
Cursor position	Function displayed		Description
3) PLC name 4) Target name	Diagnostics	PLC diagnostics	Displays the screen for executing a PLC diagnostics. (Not available when multiple objects are selected.)
		Network diagnostics	Displays the screen for executing a MELSECNET diagnostics. (Not available when multiple objects are selected.)
		CC-Link diagnostics/ CC-Link/Lt diagnostics	Displays the screen for executing a CC-Link / CC-Link/LT diagnostics. (Not available when multiple objects are selected.)
		Ethernet diagnostics	Displays the screen for executing an Ethernet diagnostics. (Not available when multiple objects are selected.)
		System monitor	Displays the screen for executing a system monitor.
	Keyword	Keyword registration	Displays the screen for registering a keyword and password. (Not available when multiple objects are selected.)
		Keyword delete	Displays the screen for deleting a keyword and password. (Not available when multiple objects are selected.)
5) Data name	Run relevant application		Starts the corresponding application to display the data.
	Copy		Copies the target data onto the clipboard.
	Paste		Pastes the data from the clipboard onto the specified position. (Not available when multiple objects are selected.)
	PLC data deletion		Deletes the target data.
	Ladder monitor		Available only when a data name is specified for starting the ladder monitor setting screen for the target PLC CPU. (Not available when multiple objects are selected.)

Network configuration information display



Cursor position	Function displayed		Description
6) Not yet retrieved (When a target name is selected.)	Refresh		Updates the data within the target PLC CPU.
7) Not yet retrieved (When a PLC route is selected.)	Refresh		Updates the network configuration information.
8) Blank area within the device detail display field (When a network is selected.)	View	List	Displays the data within the device detail display field in list format.
		Details	Displays details of the data within the device detail display field.
	Icon arrangement	Name order	Arranges the data within the device detail display field.
		Type order/ Station No. order	

(c) Others



Cursor position	Function displayed	Description
1) Toolbar	Toolbar	Displays the customize setting for toolbar.
2) Framework (grayed section)	Open PC side window	Displays the PC side window.
	Open PLC side window	Displays the PLC side window.
3) Ladder monitor	Split display	Splits the ladder monitor screen.
	Split display cancel	Restores the split ladder monitor screen to a single pane.
	Device search	Searches for the specified device.
	Step No. search	Searches for the step No./block No.
	Device test	Displays the screen for executing a device test.
	ON/OFF cause find.	Searches for the device that does not turn ON/OFF. Available for device specification during ladder display.

5.2.3 Icon lists

The following lists icons on GX Explorer.

(1) PC side window

Icon	Description	Reference
	Local drive	–
	Network drive	–
	FTP site	–
	CD-ROM drive	–
	Removal media (e.g. FD, MO) drive	–
	Folder	–
	System data	–
	Network configuration information not yet retrieved	–
	PLC name (PLC side window)	–
	Target name list (PLC side window)	–
	PLC CPU, Remote I/O station	–
	MELSECNET/10(H)	–
	CC-Link	–
	QCPU: Program memory/Device memory A/QnA/FXCPU: Internal RAM/Device memory	–
	QCPU: Memory card (RAM) QnACPU: IC memory card A (RAM), IC memory card B (RAM)	–
	QCPU: Memory card (ROM) QnACPU: IC memory card A (ROM), IC memory card B (ROM)	–
	QCPU: Standard RAM	–
	QCPU: Standard ROM	–
	Import/Export data	Section 6.6
	Snapshot data	Section 9.2
	Timing chart diagram	Section 9.3
	Trace data	Section 9.4
	Network configuration information	Section 8.1

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Icon	Description	Reference
	Parent folder for all station upload (Color: Pale bule)	–
	GX Developer project data (Gppw. wps, Gppw. wpj) (Color: Green)	–
	GX Configurator-QP project data	–
	Sequence program (***.wpg)	–
	Sequence program (for password setting)	–
	SFC program (***.wps)	–
	PLC parameter (Param.wpa), Network parameter, Remote password (Param.wpa)	–
	Intelligent module parameter (Iparam.wpa)	–
	Common comment (Common.wcd)	–
	Common comment (for password setting)	–
	Comment for respective program (***.wcd)	–
	Comment for respective program (for password setting)	–
	Device memory (***.wdv) (Color: White)	–
	Device initial value (***.wdi) (Color: Pale blue)	–
	Device initial value (for password setting)	–
	Other data (general-purpose data)	–
	Global variable	–
	File register (***.wdr)	–
	GX Configurator-CC User data (***.cmp, ***.com, ***.crp)	–
	GT Designer2 project data (***.gtd)	–
	PX Developer project data (***.fpj)	–

5.2.4 Shortcut key lists

(1) Project list/Network configuration information

Operation	Description
[+] key	Opens the currently selected folder.
[-] key	Closes the currently selected folder.
[→] key	Opens the selected folder when it is closed. Selects a folder right under the selected folder when it is open.
[←] key	Closes the selected folder when it is open. Selects the right overhead layer when the selected folder is closed.
[Backspace]	Moves to the layer above the current one.
[Ctrl] + [A]	Selects all objects within the right window.
[Ctrl] + [X]	Cuts specified items.
[Ctrl] + [C]	Copies specified items.
[Ctrl] + [V]	Pastes specified items.
[Ctrl] + drag	Performs "Download to PLC", i.e., writes to PLC side window from PC side window. Performs "Upload from PLC", i.e., read from PLC side window to PC side window. Copies objects.
[Shift] + drag	Performs "Download to PLC", i.e., writes to PLC side window from PC side window. Performs "Upload from PLC", i.e., read from PLC side window to PC side window. Shifts objects.
[Alt] + [Enter]	Displays the property for the specified item.
[Delete] or [Shift] + [Delete]	Deletes selected objects from the disk.
[F5]	Updates the window data.

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(2) Operations common to all screens

Operation	Description
→ key	Moves through items.
← key	
↑ key	
↓ key	
Alt or F10	Makes the menu bar active.
Alt + Space	Displays the shortcut menu of the title bar.
Shift or F10	Displays the shortcut menu of the specified item.
Tab	Moves to the next active item.
Shift + Tab	Moves to the previous active item. (in the opposite direction to Tab)
F1	Help display
Ctrl + F4	Closes the active window.
Alt + F4	Exit GX Explorer.

* Action when dragging the item without pressing Ctrl / Shift.

  Within one drive: Shift
  Between two drives: Copy

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5.3 Text input (Applicable character type and max. number of characters)

The following explains the text input for GX Explorer, i.e., applicable character type and max. number of characters.

Setting item	Applicable character type	Max. number of characters
User setting name Target name Access data name Operation log name Data name (Import/Export) Device list name Trace name Alarm name Error diagnostics name Analysis name System data name FTP site name All station project name Snap shot data name Timing chart diagram name	Case-insensitive All characters other than followings: • Punctuation character (11 types) *1 • Characters inapplicable for folder name (space at the top, dot) • Reserved words *1	32 characters. (For project names, refer to the specifications of the corresponding package.)
Password (Security setting)	Alphanumeric character*2	32 characters
Title (All functions)	No restrictions	32 characters
Alarm notification • SMTP, POP3 server name • E-mail address • User name • Password • Destination e-mail address	No restrictions	255 characters (256 characters for SMTP, POP3 server name)
FTP site setting • Host name (Address) • User name, password • Account • Initial folder name	No restrictions	80 characters (220 characters for initial folder name)
Internet connection setting • Host name • Address	No restrictions	 64 characters 256 characters
Wildcard	All characters other than punctuation characters *1 (However, "*" and "?" are applicable)	150 characters
Program name Device memory name Device data name Device comment name	No restrictions	8 characters
Drive/Path name*3 Search place Restore destination folder name	All characters other than punctuation characters *1 (However, "\" and ":" are applicable)	150 characters

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Setting item			Applicable character type	Max. number of characters
Device name			Case-insensitive Alphanumeric character (Applicable to existing device names only)	18 characters
Device value	16/32 bit integer	Dec	Numeric character (0 to 9) "-" is applicable to the head position only.	Depending on the data type
		Hex	Numeric character (0 to 9) Alphabet (A to F)	
	Real number		Numeric character (0 to 9), ".", "E", "+", "-"	
	ASCII character		No restrictions	
Error diagnostics • Error message • Error help			No restrictions	 64 characters 800 characters

*1: Punctuation character (\ / : ; , *?“ < > |)
Reserved word (CON AUX COM1 to COM9 LPT1 to LPT9 PRN NUL)

*2: Alphanumeric character (a to z, A to Z, 0 to 9)
Space ! “ # $ % & ‘ ( ) * + , - / : ; < = > ? @ [\] ^_ ` { | }

*3: When using either of the following methods to specify the drive name/path name on the screen, make sure to add "/" to the last of the path name/system data name.
(1) Directly entering a user-specified drive name/path name arbitrarily
(2) Entering a system data name

Alternatively, select the drive name/path name from the options (provided by clicking Reference button), and "•" will be automatically added.

5.4 Operations for PC Side Window

5.4.1 Displaying the data in the personal computer

This section explains the basic operations to be performed in the PC side window.
Click [Window]- [Open PC side window] to display the PC side window.

(1) Viewing the objects in the drive or folder

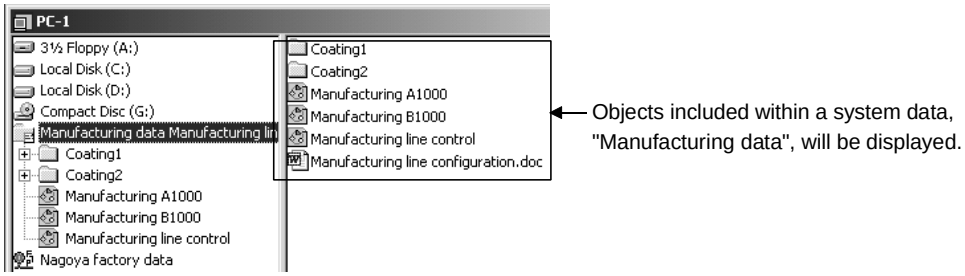
Choosing a drive or folder in the project display field or double-clicking a folder in Select a drive or folder in the project display field to display the corresponding content in the detail display field. Alternatively, perform the following operation while keeping a driver or folder selected.

Double-click or press [+] or [→] key.

The content of the selected driver or folder will be displayed.

Press [*] key.

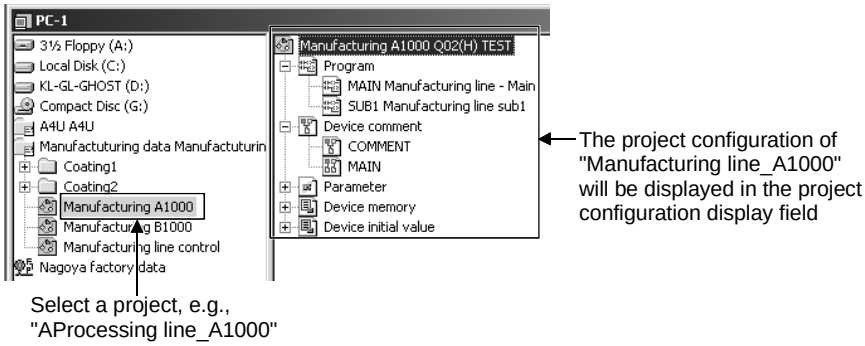
The content of the layer beneath the selected drive or folder will be displayed in the project display field.



(2) Viewing the project layout

Perform the following operations to view the project configuration.

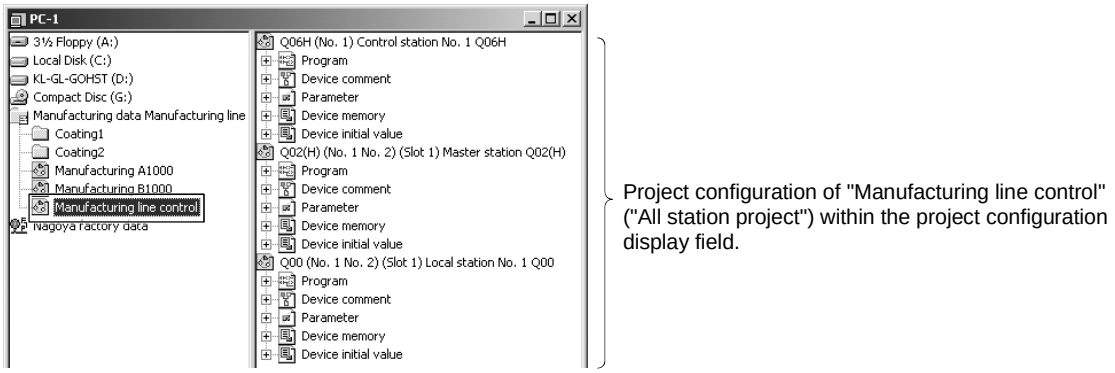
- Select a project in the project display field.
- Select a project in the detail display field and click [View] – [Project configuration].
  Category data (data type and data name) of the selected project will be displayed in the project configuration display field.



POINT
Note that when folders and files in the personal computer are displayed, GX Explorer may differ from Windows® Explorer in icons and/or upper/lower-case character indications.

(3) Display "All station project".

- Select "All station project" in the project display field.
- Select "All station project" in the detail display field and click [View] – [Project configuration].
  The content of the selected "All station project" will be displayed in the project configuration display field.

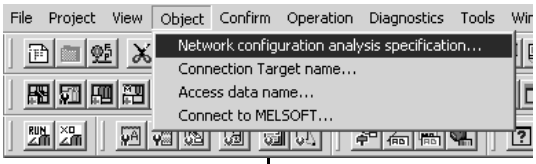


5.5 Operations for PLC Side Window

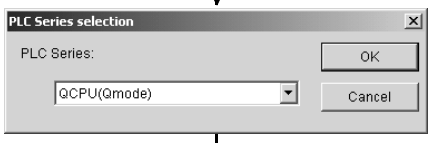
5.5.1 Displaying the PLC configuration information

If there is no network configuration information at an initial start or like, display the connection stations and network configuration in the PLC side window in the following procedure.

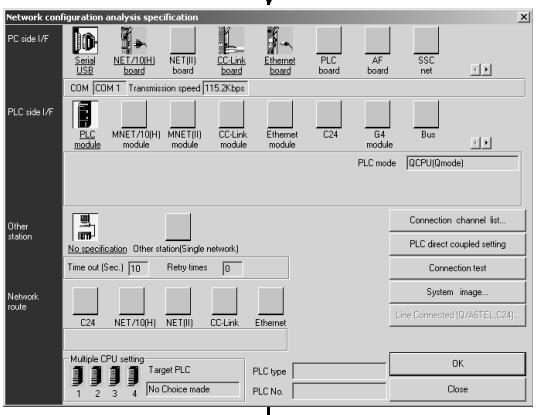
(1) Operation sequence



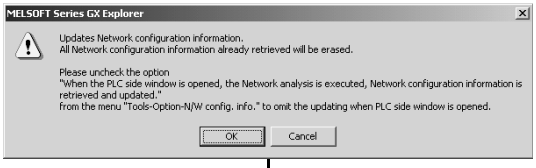
1) Click [Object] – [Network configuration analysis specification].



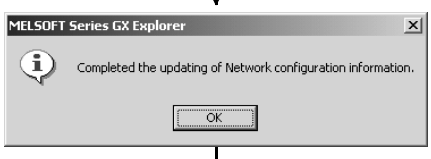
2) Select the PLC series of the target PLC CPU in "PLC Series selection" dialog box.



3) Make the settings of "PC side I/F", "PLC side I/F" and others in "Network configuration analysis specification" dialog box and click OK. (For details of "Network configuration analysis specification" dialog box, refer to Section 8.1.)


MELSOFT Series GX Explorer
Updates Network configuration information.
All Network configuration information already retrieved will be erased.
Please uncheck the option
"When the PLC side window is opened, the Network analysis is executed, Network configuration information is retrieved and updated."
from the menu "Tools-Option-N/W config. info." to omit the updating when PLC side window is opened.
OK
Cancel

4) A dialog box appears to confirm if the network configuration information will be updated.
Clicking OK will update the information.
Clicking Cancel will not update the information and display the previous information.
If the previous network configuration information has not been previously set, "Not yet retrieved" will be displayed in the PLC side window device detail display field.
For details of "Option setting", refer to Section 11.1.2.



5) When the network configuration information is updated, the corresponding confirmation dialog box appears.

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6) The connected station and the network configuration are displayed in the PLC side window.

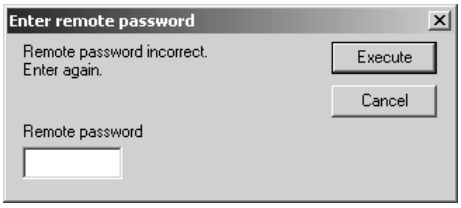
REMARK

When "Upload from PLC" or "Network analysis" is executed, the PLC CPU name with "<S>" added to the head, i.e., PLC name is displayed.
The PLC name can be selected in the target name field of each function, similar to the way a user setting target name is selected. (This is irrelevant to "Target name" dialog box and "Security setting" dialog box.)
However, when "Network analysis" is executed, the PLC name is not displayed in the target name filed. Therefore, it is recommended to set the name as target name in advance.

Example: <S>Q06H connected station

POINT

- The network configuration information of the connected station varies with its PLC series and the position where it is located within the network. (For details of PLC series that can be displayed in the network configuration information and the available information range, refer to Section 8.1.1.)
- If the connection has been made via the QCPU Ethernet module with remote password setting, enter the remote password in the following screen.



- The acquired network configuration information can be saved by clicking [File] – [Save network configuration information] menu.
  The saved information can be read by clicking [File] – [Open network configuration information] menu. For operation of each network configuration information, refer to Section 6.7 and later.

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5.5.2 Displaying the data in the PLC CPU

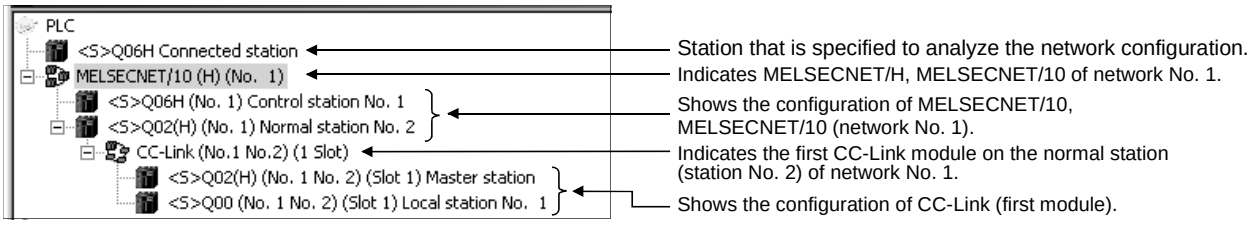
This section describes the display operation to be performed in the PLC side window.

(1) Network configuration

Select [Window] – [Open PLC side window] form the menu bar to display the PLC side window.

After a dialog box appears to confirm if the network configuration information will be updated, display the PLC network configuration.

The PLC configuration field shows the connection station and the station names connected to MELSECNET/10(H) and CC-Link in a tree structure.


PLC
<S>Q06H Connected station
MELSECNET/10 (H) (No. 1)
<S>Q06H (No. 1) Control station No. 1
<S>Q02(H) (No. 1) Normal station No. 2
CC-Link (No.1 No.2) (1 Slot)
<S>Q02(H) (No. 1 No. 2) (Slot 1) Master station
<S>Q00 (No. 1 No. 2) (Slot 1) Local station No. 1
Station that is specified to analyze the network configuration.
Indicates MELSECNET/H, MELSECNET/10 of network No. 1.
Shows the configuration of MELSECNET/10, MELSECNET/10 (network No. 1).
Indicates the first CC-Link module on the normal station (station No. 2) of network No. 1.
Shows the configuration of CC-Link (first module).

The station names are displayed as indicated below.

• For the connection station, the PLC type and station type are displayed.

(Example) <S> Q06H Connection station

PLC type, Station type

• For CC-Link on the connection station, the PLC type, module number, station type and station number are displayed.
The module number indicates the master/local module number on the connection station.
The station number is given to the local station only.

(Example) <S> Q06H (board1) Local station No.1

PLC type, Module number, Station type, Station number

• For the MELSECNET/H, MELSECNET/10 station, the PLC type, network number, station type and station number are displayed.

(Example) <S> Q06H (No.1) Control station No.1

PLC type, Network number, Station type, Station number

• For CC-Link on the MELSECNET/H, MELSECNET/10 station, the PLC type, the MELSECNET/H, MELSECNET/10 network number and station number of the station loaded with the master station, the station type of CC-Link and the station number of CC-Link are displayed.

(Example) <S> Q00H (No.1 No.2) (board1) Local station No.1

PLC type, MELSECNET/H, MELSECNET/10 station number, CC-Link station type, MELSECNET/H, MELSECNET/10 network number, Module number, CC-Link station number

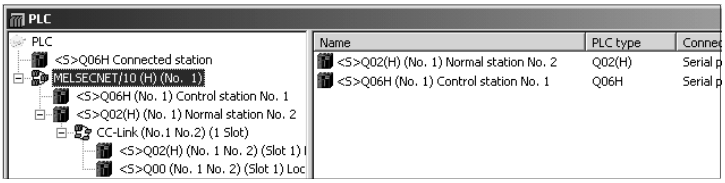
• For the QCPU (Q mode) multiple PLC system, the CPU number is displayed at the end of the station name.

(Example) <S> Q06H Connection station PLC No.2

PLC type Station type CPU No.

(a) MELSECNET/H, MELSECNET/10 network configuration

When MELSECNET/H, MELSECNET/10 is selected in the PLC configuration field, the device detail display field shows the configuration of that network.


PLC
PLC
<S>Q06H Connected station
MELSECNET/10 (H) (No. 1)
<S>Q06H (No. 1) Control station No. 1
<S>Q02(H) (No. 1) Normal station No. 2
CC-Link (No.1 No.2) (1 Slot)
<S>Q02(H) (No. 1 No. 2) (Slot 1) I
<S>Q00 (No. 1 No. 2) (Slot 1) Loc
Name
PLC type
<S>Q02(H) (No. 1) Normal station No. 2
Q02(H)
<S>Q06H (No. 1) Control station No. 1
Q06H

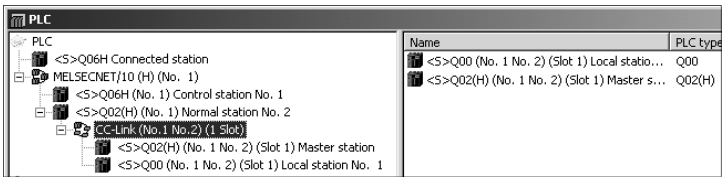
The following station types are displayed in the station names of MELSECNET/H, MELSECNET/10.

- Control station
- Normal station
- Remote master
- Multiplexed remote sub
- Parallel remote master
- Multiplexed remote sub
- Parallel remote sub
- Stand by station

For the remote I/O station of MELSECNET/H, the PLC type is displayed as "RemoteI/O".

(b) CC-Link network configuration

When CC-Link is selected in the PLC configuration field, the device detail display field shows the stations of that network.


PLC
PLC
<S>Q06H Connected station
MELSECNET/10 (H) (No. 1)
<S>Q06H (No. 1) Control station No. 1
<S>Q02(H) (No. 1) Normal station No. 2
CC-Link (No.1 No.2) (1 Slot)
<S>Q02(H) (No. 1 No. 2) (Slot 1) Master station
<S>Q00 (No. 1 No. 2) (Slot 1) Local station No. 1
Name
PLC type
<S>Q00 (No. 1 No. 2) (Slot 1) Local statio...
Q00
<S>Q02(H) (No. 1 No. 2) (Slot 1) Master s...
Q02(H)

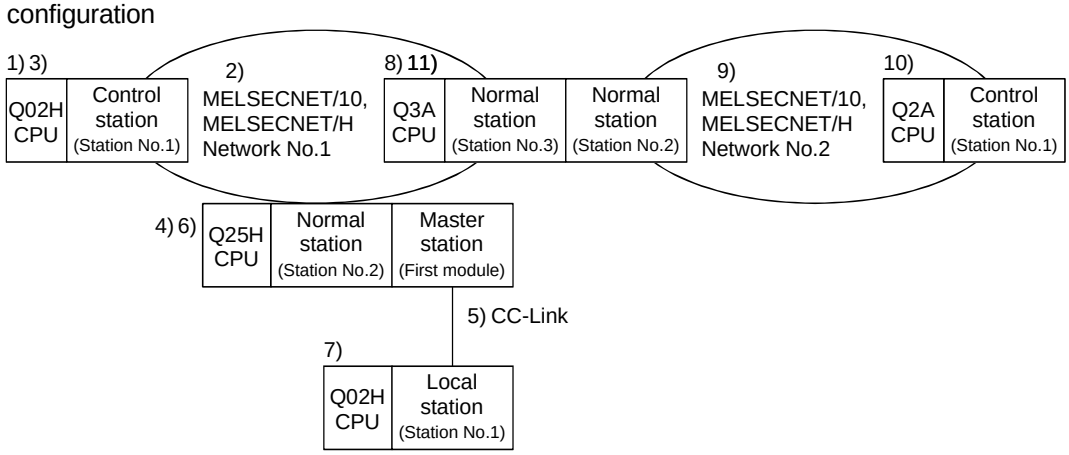
The following station types are displayed in the network configuration of CC-Link.

- Master station
- Local station
- Standby master

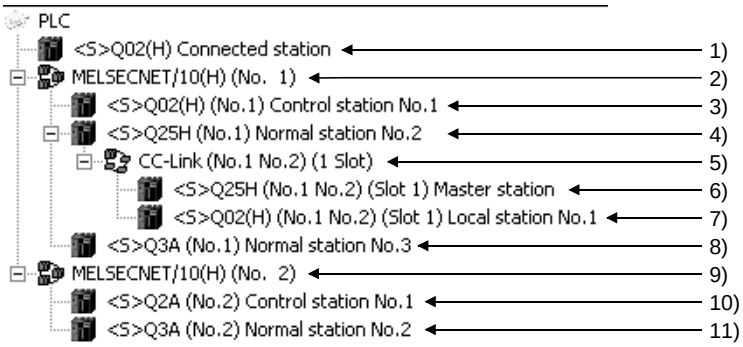
POINT

In the following network configuration, the display example of the PLC configuration field is as shown below.

• Network configuration



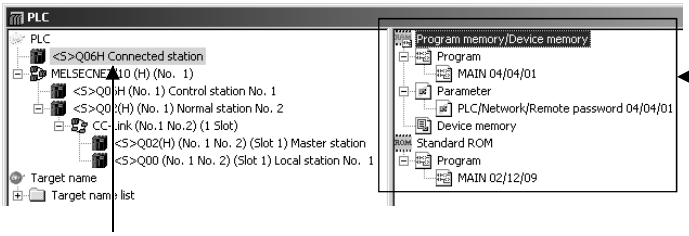
• Display in PLC configuration field


PLC
<S>Q02(H) Connected station 1)
MELSECNET/10(H) (No. 1) 2)
<S>Q02(H) (No.1) Control station No.1 3)
<S>Q25H (No.1) Normal station No.2 4)
CC-Link (No.1 No.2) (1 Slot) 5)
<S>Q25H (No.1 No.2) (Slot 1) Master station 6)
<S>Q02(H) (No.1 No.2) (Slot 1) Local station No.1 7)
<S>Q3A (No.1) Normal station No.3 8)
MELSECNET/10(H) (No. 2) 9)
<S>Q2A (No.2) Control station No.1 10)
<S>Q3A (No.2) Normal station No.2 11)

(2) Viewing the memories and data in the PLC CPU

Carry out the following operation to check the memory and data within the PLC CPU.

• Select a station in the PLC display field.
Category data (data type and data name) will be displayed in the memory configuration display field.
However, files within a drive with non-display attribute will not be displayed.



"<S>Q06H connected station" memory name is displayed, and the data type is displayed in tree format of data name and date.

Select ,"<S>Q06H connected station"

POINT

• When SFC (MELSAP2) is stored in the ACPU, "MAIN + MELSAP2/ microcomputer" is displayed as Program.
• Select the displayed station and perform "Upload from PLC" by drag & drop.

(3) Target name list

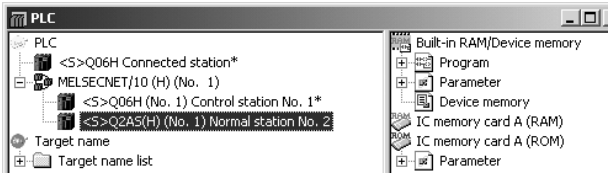
Set target names are displayed in list format.
Placing the cursor at each target name displays the memory configuration within the corresponding target name in the memory configuration display field.
If read of the past settings fails, "Not yet retrieved" is displayed in the memory configuration display field.
The target name settings can be changed by selecting a target name and clicking [Object] – [Target name] or right click the name and select [Target name]. In addition, by using a PLC name, a target name can be created.
For details of the target name setting dialog box, refer to Section 8.2.
In the dialog box, "Upload from PLC" can be executed by selecting a target name and shifting it through drag & drop operation.

POINT

When "*" is displayed in the screen, the PLC name information needs to be updated. Carry out either of the following operations.

- Select the PLC name including "*" and click [View] – [Refresh].
- Execute "Network analysis" for the PLC name including "*".
- Open other network configuration information.

Example of screen including "*"



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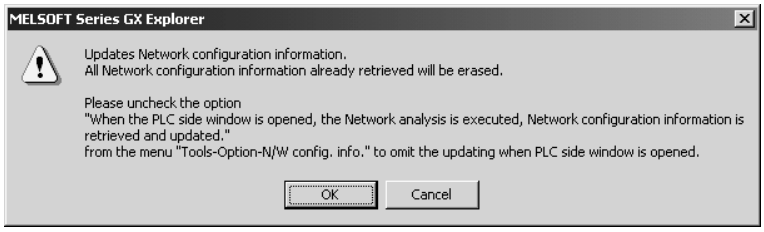
5.5.3 Updating the network configuration information

The network configuration information indicates the result of analyzing a network configuration based on a connected station.
The network configuration information is analyzed when the connected station or network configuration is changed in the following cases:

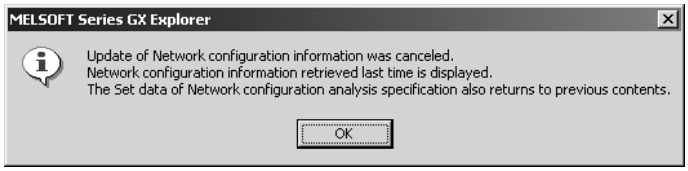
1. When the attempt is made to display the network update information for the first time after the connection target has been set in "Network configuration analysis specification" dialog box.
2. When the cursor is placed at a "PLC" within the PLC side window and then either select [View] – [Refresh] or press F5.
3. When a user setting name is saved with the PLC side window open, "Last end state" or "Select existing user setting name" is selected in "User setting name specification - GX Explorer" and then OK button is clicked.
4. When the PLC side window is opened.
   However, whether the network configuration analysis is to be executed or not for this case can be set in "Option" setting.
   For details of "Option" setting, refer to Section 11.1.2.

Prior to execution of network configuration analysis, a message appears to confirm if the network configuration information will be updated.


MELSOFT Series GX Explorer
Updates Network configuration information.
All Network configuration information already retrieved will be erased.
Please uncheck the option
"When the PLC side window is opened, the Network analysis is executed, Network configuration information is retrieved and updated."
from the menu "Tools-Option-N/W config. info." to omit the updating when PLC side window is opened.
OK
Cancel

Clicking OK starts the analysis of the current network configuration.

Clicking Cancel displays the following dialog box and then the previous network configuration information without executing the analysis of network configuration.
If the previous network configuration information has not been previously set, "Not yet retrieved" will be displayed in the PLC side window device detail display field.


MELSOFT Series GX Explorer
Update of Network configuration information was canceled.
Network configuration information retrieved last time is displayed.
The Set data of Network configuration analysis specification also returns to previous contents.
OK

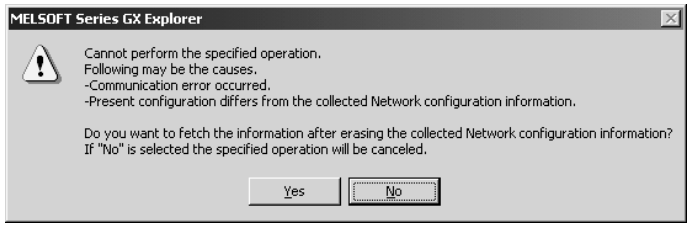
When update is completed

When the network configuration information is updated as a result of the analysis of network configuration information, the following dialog box appears.

Clicking OK displays the analysis results of network configuration information in the PLC side window.

When update fails

If update of the network configuration information fails, the following dialog box appears.


MELSOFT Series GX Explorer
Cannot perform the specified operation.
Following may be the causes.
-Communication error occurred.
-Present configuration differs from the collected Network configuration information.
Do you want to fetch the information after erasing the collected Network configuration information?
If "No" is selected the specified operation will be canceled.
Yes
No

Clicking Yes starts the re-acquisition of the network configuration information.

Clicking No displays "Not yet retrieved" in the PLC side window device detail display field. Make the settings in order that the network configuration will be analyzed and execute the analysis of the network configuration again.
For details of "Network configuration analysis specification" dialog box, refer to Section 8.1

POINT

- When changing the connected station, change the relevant settings in "Network configuration analysis specification" dialog box.
- When analysis is made for the connected station of QCPU (Q mode) and then the connected station is changed to other than QCPU (Q mode), the PLC CPUs which are different from the connected station in PLC series will not be displayed.
- When the connected station is changed to a local station in the network configuration consisting of only CC-Link local stations, only the PLC CPU found first during network configuration analysis will be displayed if the same type PLC CPUs are included in the system. (Each of CC-Link local stations of the same configuration cannot be identified.)
- When the connected station is changed to ACPU other than AnUCPU, stations that are consistent in network configuration information cannot be found, as the MELSECNET/10 module cannot be specified.
- For operation of each network configuration information, refer to Section 6.7 and later.

6 FILE OPERATION

This chapter explains the operations that can be executed from [File] menu: operation for user setting names, i.e., the environments used by user: operation of importing/exporting data set for each function: operation of analyzed network configuration information.

6.1 Creating a New User Setting Name

[Purpose]

Newly start GX Explorer.

[Operation Procedure]

[File] → [New user setting name]

POINT

- The operations after the above procedure is executed are the same as those when "New" is selected in "User setting name specification - GX Explorer" dialog box.
  When setting a user setting name, refer to Section 6.4.

6.2 Opening a User Setting Name

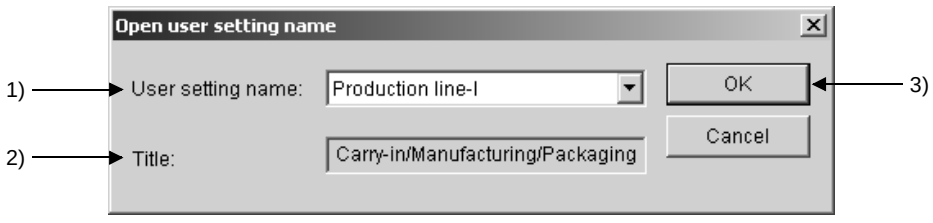
[Purpose]

Open data saved as a user setting name.

[Operation Procedure]

[File] → [Open user setting name]

[Setting Screen]



[Setting Item]

1) User setting name

Specify the user setting name to be opened.

2) Title

The title related to the specified user setting name is displayed.

3) OK button

Click the button to display the data saved as the specified user setting name.

6.3 Saving the User Setting Name

[Purpose]

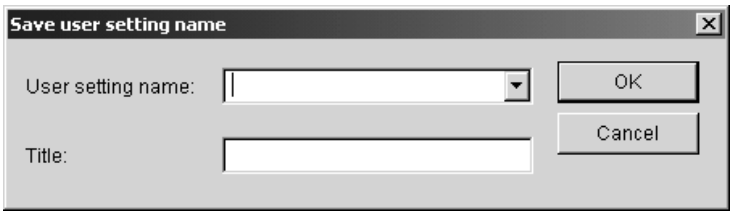
Overwrite the user setting data.

[Operation Procedure]

[File] → [Save user setting name]

POINT

When no user setting name has not been set for GX Explorer start or no user setting data has not been saved after [New user setting name] was selected from the menu, "Save user setting name" dialog box appears.



6.4 Saving the User Setting Name As

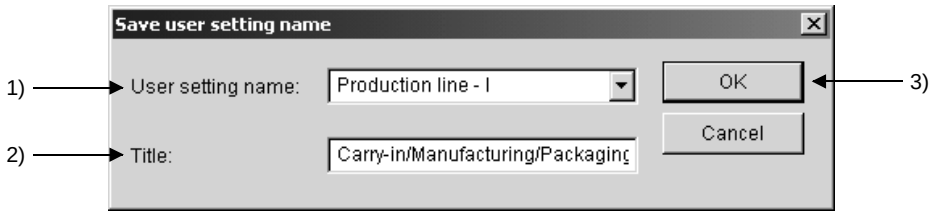
[Purpose]

Save the user setting as any name.

[Operation Procedure]

[File] → [Save user setting name as]

[Setting Screen]



[Setting Item]

1) User setting name

Specify the user setting name to be saved.
When setting a new user setting name, directly enter the name in the user setting name edit dialog box, or select an existing name from the combo box and change it.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.
Up to 1024 user setting names can be registered.

2) Title

Set the title related to the user setting name to be saved.
The title edit dialog box can be directly entered and edited.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

3) OK button

Click the button to save data as the specified name.

Data saved in the user setting name

	GX Explorer user setting data	User setting data details	Remarks
1	Default display screen • Display position, Windows size • Displayed functions and details (Setting)	Position of default display screen, window size, displayed function and details	• The data is managed by user-specified name. • Function execution status is saved as the function setting when the user setting is saved. However, execution results such as monitor result cannot be restored. If saving operation was done when the function was working, the function will not automatically start when it is restored again. • Ladder monitor screen is not restored when connection to PLC CPU is not made, or when MELSOFT connection is made.
2	Customize settings	Settings made in "Customize settings" screen	
3	Easy menu settings	Settings made arbitrary in "Easy menu"	
4	Target name, access data and others specified for each maintenance function	Target name, access data name and others specified when setting each maintenance function	
5	Data set for each maintenance function	Local device monitor setting device list	
		Forced I/O setting list	
		Comment data reference file	
		T/C set value reference file	
		Target name list	
		Access data name list	
		Function list	
		Easy menu setting data	
		Target name specification data for network configuration information	
		Relation information	
		Customize setting data	
		Option setting data	
		List of PLC names for connected stations	
		List of PLC names in Network	
		Startup order information (screen order)	
		User security setting data	
		Backup information	
		Screen information for main screen startup	
		Screen information for PC side window startup	
		Screen information for PLC side window startup	
		Screen information for device monitor startup	
		Screen information for timing chart startup	
		Screen information for ladder monitor startup	
		Screen information for trace startup	
		Screen information for error diagnostics	
		Screen information for alarm notification startup	
		Screen information for analysis startup	
		Screen information for Easy menu startup	
		Network configuration information	

6.5 Deleting a User Setting Name

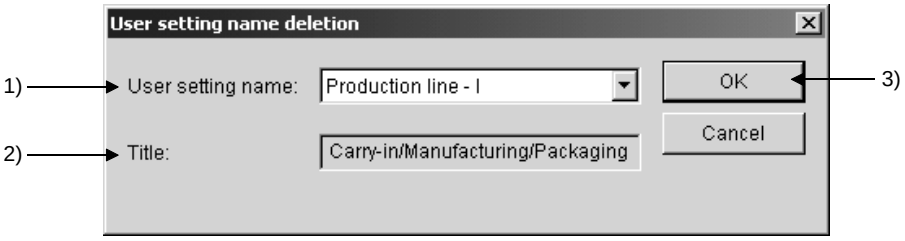
[Purpose]

Delete the user setting name.

[Operation Procedure]

[File] → [Delete user setting name]

[Setting Screen]



[Setting Item]

1) User setting name

Select the user setting name to be deleted from the combo box.

2) Title

The title related to the selected user setting name is displayed.

3) OK button

Click the button to delete data of the specified user setting name and the relevant data.

6.6 Import/Export

[Purpose]

Import or export the data set for each function.

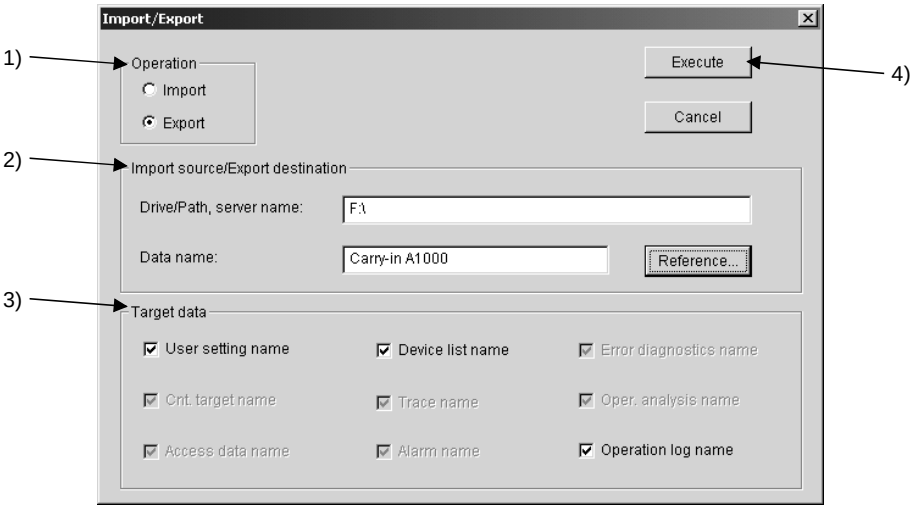
Import indicates reading the data from the specified drive or path into the running GX Explorer.

Export indicates storing the setting data of the running GX Explorer in the specified drive/path.

[Operation Procedure]

[File] → [Import/Export]

[Setting Screen]



[Setting Item]

1) Operation

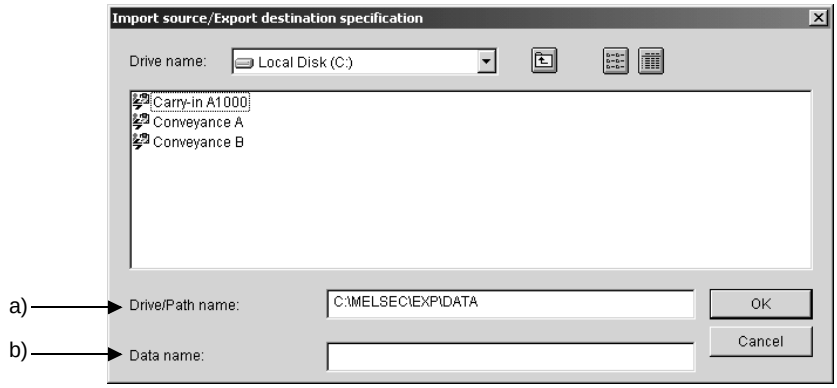
Select Import or Export operation.

2) Import source/export destination

Enter the path and data name for the import source or export destination.

For information of text input (applicable character type and max. number of characters), refer to Section 5.3.

Click Reference button to display "Import source/Export destination specification" dialog box.



[Setting Item]

a) Drive/Path name

Select or directly enter the drive/path name.
For the character type and max. number of characters applicable for direct text input, refer to Section 5.3.

b) Data name

Enter the data name. For the character type and max. number of characters applicable for direct text input, refer to Section 5.3.
Up to 150 characters are used for both drive/path name and network configuration information name.

c) Target data

Select the setting data to be imported or exported.

Execute button

Click the button to execute an import or export.

POINT

A local disk, network drive, FTP site or other place can be specified for the import resource/export destination.

The following table lists the import/export target data.

No.	Target data	Description	Reference	Remarks
1	User setting name	• Each user setting • Customize setting • Security setting • Network configuration data is not included • "Last end state" is not included	Section 1.1.(6) Section 6.1 to 6.5	The followings are not included, as they are to be saved by user arbitrarily. • Snapshot • Trace results • Timing chart diagram
2	Target name	Each target name setting	Section 8.2	
3	Access data name	Each access data name setting	Section 8.3	
4	Device list name	Each device list setting	Section 10.2	
5	Trace name	Trace setting only • Trace results are not included.	Section 9.4	
6	Alarm name	Each alarm notification setting	Section 9.12	
7	Error diagnostics name	Each error diagnostics setting	Section 9.7	
8	Analysis name	Each analysis setting	Section 9.8	
9	Operation log name	Logs that are not saved with name are not included.	Section 11.1.4	

6.7 Opening a Network Configuration Information

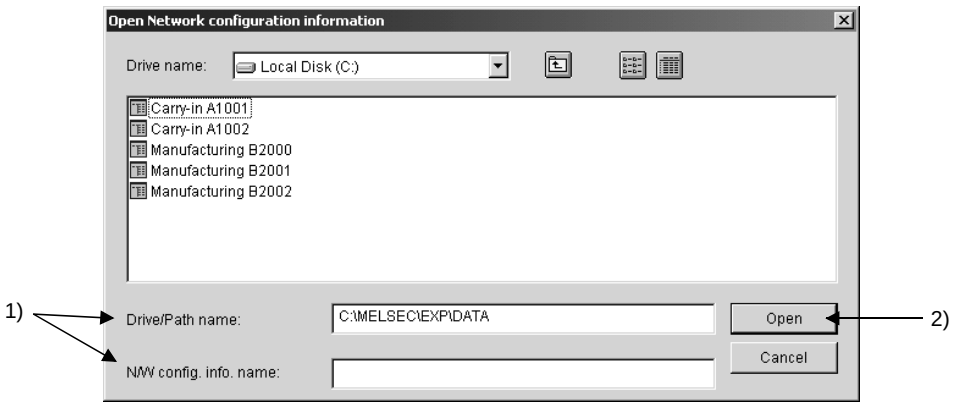
[Purpose]

Open the saved network configuration information.
The network configuration information appears as saved, however, it will not be updated.

[Operation Procedure]

[File] → [Open network configuration information]

[Setting Screen]



[Setting Item]

1) Drive/Path name, N/W config. info. Name

Select or directly enter the drive/path name and network configuration information name.
For the character type and max. number of characters applicable for direct text input, refer to Section 5.3. Up to 150 characters are used for both drive/path name and network configuration information name.

3) Open button

Click the button to start the PLC side window. The network configuration information will be read out to the PLC side window.

6 - 8

6.8 Saving the Network Configuration Information

[Purpose]

Overwrite the network configuration information name.

[Operation Procedure]

[File] → [Save network configuration information]

POINT
• Setting screen When the network configuration information name has not been specified, "Save network configuration information as" dialog box appears. For details of the setting, refer to Section 6.9.

6.9 Saving the Network Configuration Information As

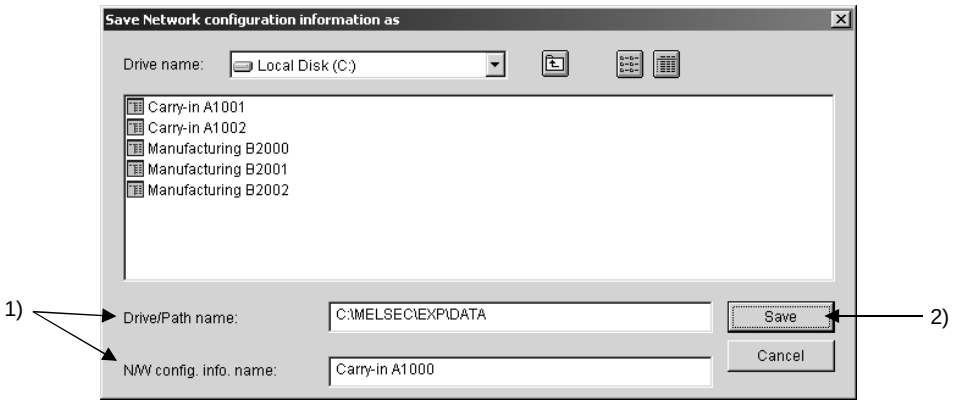
[Purpose]

Save the analyzed network configuration information as any name.

[Operation procedure]

[File] → [Save network configuration information as]

[Setting Screen]



[Setting Item]

1) Drive/Path name, N/W config. info. Name

Select or directly enter the drive/path name and network configuration information name.

For the character type and max. number of characters applicable for direct text input, refer to Section 5.3. Up to 150 characters are used for both drive/path name and network configuration information name.

2) Save button

Click the button to save the network configuration information.

6 - 9

6.10 Deleting a Network Configuration Information

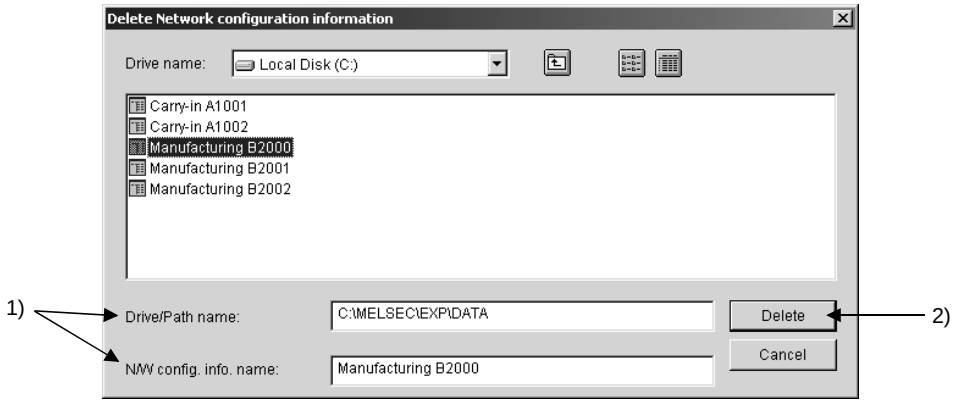
[Purpose]

Delete the saved network configuration information.

[Operation Procedure]

[File] → [Save network configuration information as]

[Setting Screen]



[Setting Item]

1) Drive/Path name, N/W config. info. name

Select or directly enter the drive/path name and network configuration information name.

For the character type and max. number of characters applicable for direct text input, refer to Section 5.3. Up to 150 characters are used for both drive/path name and network configuration information name.

2) Delete button

A dialog box appears to confirm if the network configuration information will be deleted or not.

7 PROJECT OPERATION

This chapter explains the operations that can be executed from [Project] menu.

7.1 Creating New Project Internal Parts

Create new system data, folders and FTP sites within a project.
A project cannot be created.

7.1.1 Displaying system data creation screen

Register the specified folder as system data, and display it at the same top tier as a PC drive.
Gathering various projects in a specific folder enables these projects to be easily centralized and managed.

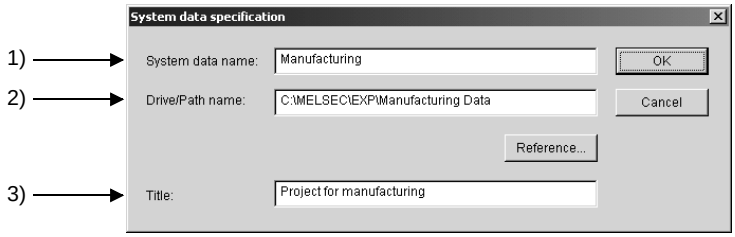
[Purpose]

Create a folder to be registered as system data.

[Operation Procedure]

[Project] → [New] → [System data]

[Setting screen]



[Setting item]

1) System data name

Name the folder to be registered as system data.
The registered system data name is handled at the same tier as PC drive name.
For the applicable character type and max. number of characters for text input, refer to section 5.3.
Note that "aa" and "AA" are regarded as the same name (case-insensitive).

2) Drive/Path name

Specify the folder to be registered as system data.
Alternatively, select the drive/path name from the options in "System data specification" dialog box, which appears by clicking Reference button.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.

3) Title

Enter the title corresponding to the specified system data name, as necessary.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

POINT

- The system data of older version is inapplicable due to version incompatibility.
- When specifying a folder, note that an FTP site name or system data name is inapplicable for drive/path name.
  Folders under local drives and network drives are applicable.

7.1.2 Creating a folder

[Purpose]

Create a new folder.

[Operation Procedure]

Place the cursor at the drive or folder where a new folder is to be created, and click [Project] – [New] – [Folder] from the menu bar. As a new folder appears, name it arbitrarily.

7 - 2

7.1.3 FTP site setting

[Purpose]

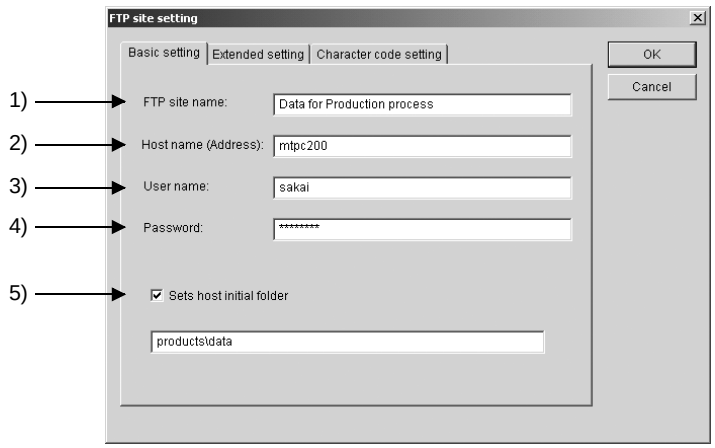
Make the settings in order to connect to an FTP site.

[Operation Procedure]

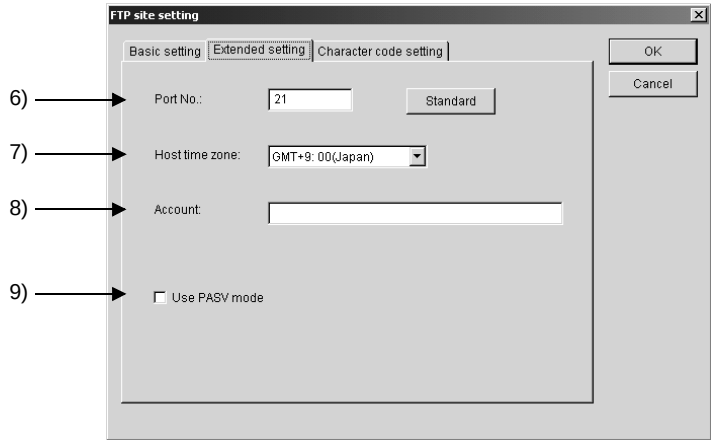
[Project] – [New] – [FTP site]

[Setting Screen]

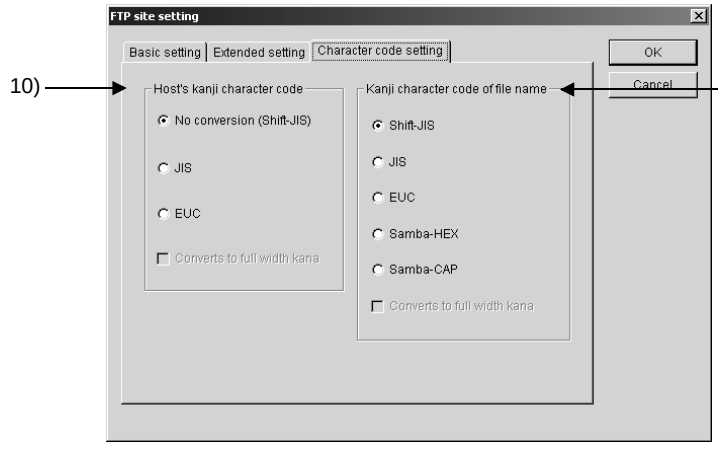
<<Basic setting>>



<<Extended setting>>



<<Character code setting>>



7 - 3

[Setting item]

Enter the FTP server information

<<Basic setting>>

1) FTP site name

Enter the name to be displayed in project list.
For the applicable character type and max. number of characters for text input, refer to section 5.3.
Note that "aa" and "AA" are regarded as the same name (case-insensitive).

2) Host name(Address)

Specify an FTP site by name or IP address.
For max. number of characters that can be input, refer to section 5.3.

3) User name

For max. number of characters that can be input, refer to section 5.3.

4) Password

For max. number of characters that can be input, refer to section 5.3.

5) Sets host initial folder

Check the check box to specify a directory under the FTP site for default connection.
For max. number of characters that can be input, refer to section 5.3.

<<Extended setting>>

6) Port No.

Initial vaule: 21
The No. can be changed in the range of 0 to 99999 only when required for the host.
Clicking Standard restores to the initial value, 21.

7) Host time zone

Set to "GMT+9:00(JAPAN) " by default.

8) Account

For max. number of characters that can be input, refer to section 5.3.
Set this item only when required for the host.

9) Use PASV mode

Check the check box only when the connection from the server to client is disconnected by packet file ring or other reason and data transfer is disabled.

<<Character code setting>>

10) Host's kanji character code

Select "No conversion (Shift-JIS)", "JIS" or "EUC" for the host's character code.
"Converts to full width kana" is available when "JIS" or "EUC" is selected.

11) Kanji character code of file name

Select "Shift-IS", "JIS", "EUC", "Samba-HEX" or "Samba-CAP" for the character code of file name.
"Converts to full width kana" is available when "JIS" or "EUC" is selected.

POINT

- "FTP site setting" dialog box will not appear when the FTP site function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- FTP site connection can be made even if the relevant items within <<Extended setting>> are set to default.
- FTP site connection is made when the FTP site name is opened in the PC side window.
- FTP side connection is broken when the PC side window is closed or GX Explorer is terminated.
- Cautions for FTP site connection
  Dial-up connection, firewall and one time password are unsupported. Also, some hosts are unsupported, if GX Explorer cannot automatically recognize them.
  A folder or file name including a Single-byte space at the head cannot be recognized.

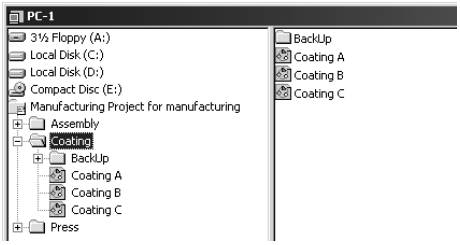
7.2 Cutting/Pasting data

[Purpose]

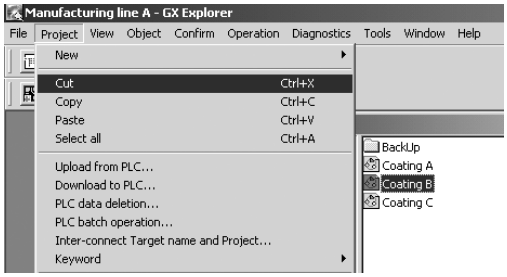
Place the target data on the clipboard and paste it onto the specified position.
The cut/paste operation can be performed within the PC side window.

[Operation Procedure]

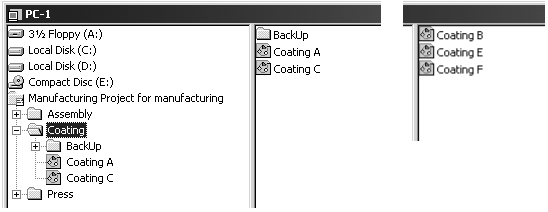
1) Select the project to be moved.



2) Click [Project]-[Cut] from the menu bar.
The corresponding icon turns transparent.



3) Select the destination drive or folder, click [Project] – [Paste] from the menu bar.
The cut project is pasted onto the specified position.



POINT

- Objects that can be cut
  Project display field: Folder, Project
  Detail display field: All objects
  Project configuration display field: Project
- Objects within an FTP server can be pasted onto the different FTP server.
- Objects can be moved over the drive by Shift + drag and drop.
- Objects can be cut by Ctrl + X : pasted by Ctrl + V.

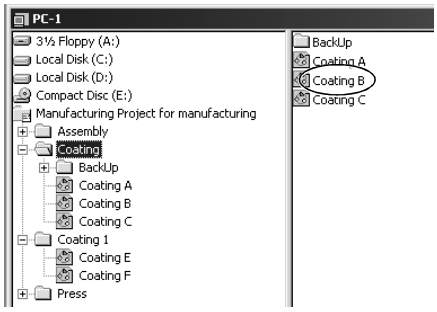
7.3 Copying/Pasting data

[Purpose]

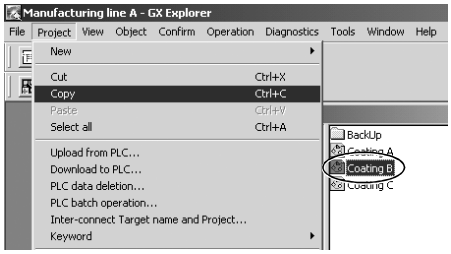
Copy the target data onto the clipboard and paste it onto the specified position.
The copy/paste operation can be performed within the PC side window.

[Operation Procedure]

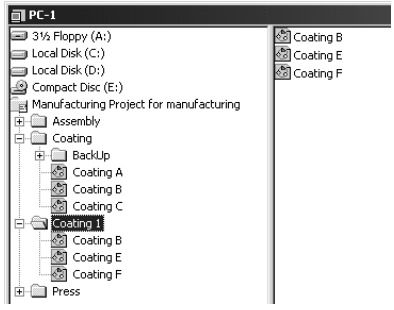
1) Select the project to be copied.



2) Click [Project]-[Copy] from the menu bar.
The corresponding icon remains as before the operation.



3) Select the destination drive or folder, click [Project] – [Paste] from the menu bar.
The copied project is pasted onto the specified position.



POINT

- Objects that can be copied
  Project display field: Drive, system data name, FTP site name, folder, project
  Detail display field: All objects
  Project configuration display field: Project, data type, data name
- Objects can be moved over the drive by Shift + drag and drop.
- Objects can be copied by Ctrl + C : pasted by Ctrl + V.

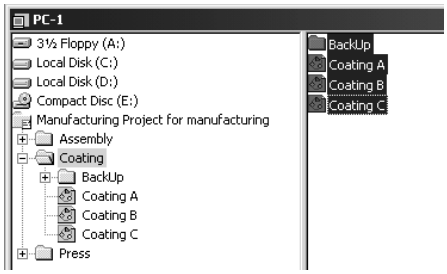
7.4 Selecting all data

[Purpose]

Select all data at a time.

[Operation Procedure]

Clicking [Project]-[All] selects all data within the PC side window detail display field or project configuration display field.
After the above operation, all data can be cut, copied or pasted.



POINT

- When selecting all data within the project configuration display field, the data type and the relevant data name cannot be simultaneously selected. Either of them can be selected.

7.5 Uploading Data from PLC

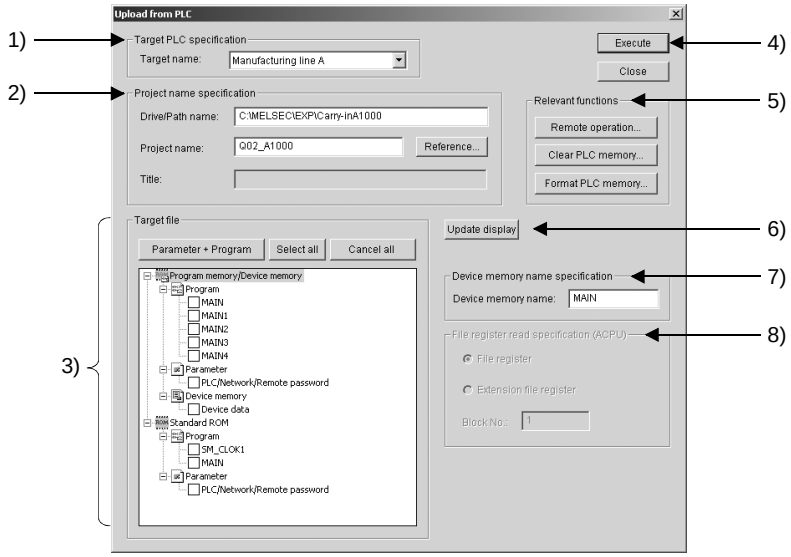
[Purpose]

Read programs from PLC CPU and save them within PC.

[Operation Procedure]

[Project] → [Upload from PLC]

[Setting Screen]



[Setting Item]

1) Target PLC specification

Select the target PLC CPU by target name.

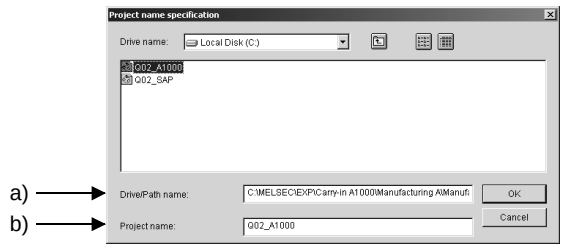
2) Project name specification

Specify the destination within the PC by drive/path name and project name.

Drive/path name: pecify the storage destination of the data read from the PLC CPU to the PC.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.
However, FTP path cannot be set.

Project name: Specify the destination project of the read data.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.
Up to 150 characters are used for both drive/path name and project name.

The destination can be specified from "Project name specification" dialog box that appears by clicking Reference.



[Setting Item]

a) Drive/path name

Select a drive/path name.

When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.

b) Project name

Selecting a project name selects a drive/path name automatically.

When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.

Title: The title corresponding to the project name is displayed.
Not editable.

3) Target file

All data within the target PLC CPU (data to be transferred) are displayed in tree format.

Clicking [Update display] displays the data in tree format.

Check the check box of the data to be read.

[Parameter + Program] button:

Click the button to check the check boxes of project parameters and all programs.

[Select all] button: Click the button to check the check boxes of all data.

[Cancel all] button: Click the button to uncheck the check boxes of all data.

4) [Execute] button

Click the button to write data specified in "Target file" section into PC.

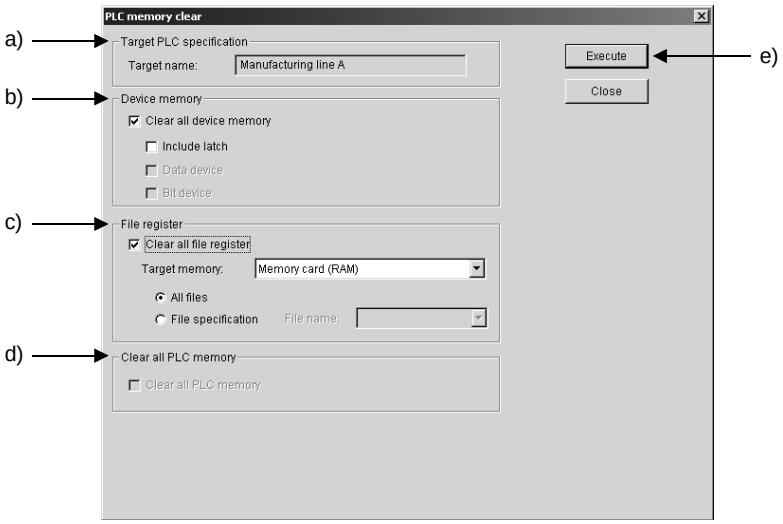
5) Relevant functions

[Remote operation] button:

Click the button to perform a remote operation of the PLC CPU.
For details, refer to Section 10.1

[Clear PLC memory] button:

Click the button to clear the PLC CPU memory.
Clicking the button displays "PLC memory clear" dialog box.



[Setting Item]

a) Target PLC specification

The target name selected in "Upload from PLC" dialog box is displayed.

Not editable.

b) Device memory

Clear all device memory:

Clears all device memory except file register.

The following settings are available by checking the check box.

Only "Include latch" is available for Q/QnACPU.

Either "Data device" or "Bit device" is available for FXCPU.

c) File register

Clear all file register: (Q/QnACPU)

Clears all file registers.

A target memory can be selected by checking the check box.

Select "All files" or "File specification" to specify the target to be cleared.

d) Clear all PLC memory (A/FXCPU)

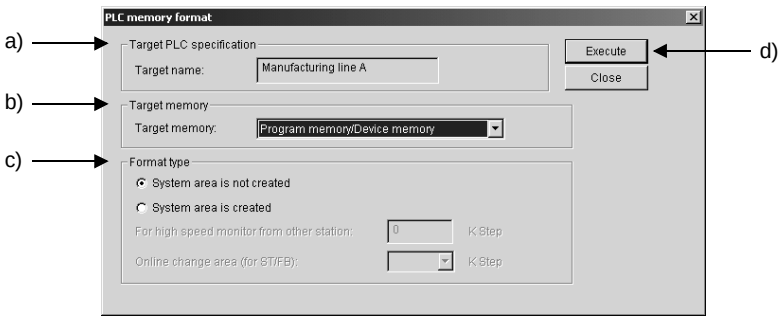
Click the check box to clear all PLC memory.

e) Execute button

Click the button to execute the settings made in "PLC memory clear" dialog box.

Format PLC memory (Q/QnACPU):

Click the button to display "PLC memory format" dialog box, which is for formatting PLC CPU memory.



[Setting Item]

a) Target PLC specification

The target name selected in "Upload from PLC" dialog box is displayed.

Not selectable.

b) Target memory

Select a memory to be formatted.

c) Format type

Select a format type.

The following shows the setting area for creating a system area.

The area differs with the PLC CPU used.

For higher speed monitoring from other station: 0 to 15ksteps

Online change area(for ST/FB): 0, 2, 4ksteps

d) Execute button

Click the button to format the PLC memory.

6) Update display button

Click the button to update the target file field.

7) Device memory name specification (Q/QnACPU)

Change the device memory name (file name) used for the project to be read.

8) File register read specification(ACPU)

Specify the file register to be read.

Block No. (1 to 256) can be entered only when "Extension file register" is selected.

POINT

- "Upload from PLC" dialog box will not appear when "Upload from PLC" function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- Data cannot be pasted from the clipboard onto the FTP folder.
- The data name to be read from PLC are all data within the program memory (Internal RAM).
- Select a PLC within the PLC display field and drag and drop it on the PC side window to read data from all stations (PLCs)

7.6 Downloading Data to PLC

[Purpose]

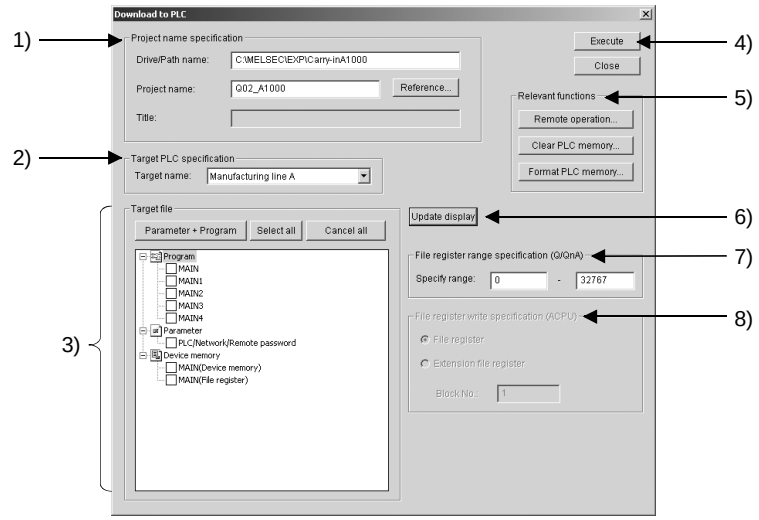
Write project data from PC to PLC CPU.

The destination drive for each data can be specified when using Q/QnACPU.

[Operation Procedure]

[Project] → [Download to PLC]

[Setting Screen]



[Setting Item]

1) Project name specification

Specify the target data by drive/path name and project name.

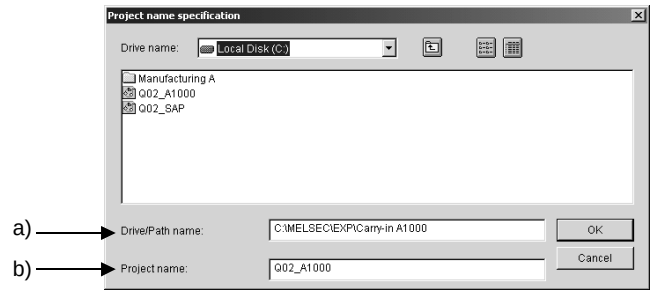
Drive/path name:

Specify the place where data will be written.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.
However, FTP path cannot be set.

Project name:

Specify the project where data will be written.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.

The destination can be specified from "Project name specification" dialog box that appears by clicking Reference.



[Setting Item]

a) Drive/path name

Select a drive/path name.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.

b) Project name

Selecting a project name selects a drive/path name automatically.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.
Up to 150 characters are used for both drive/path name and project name.

Title: The title corresponding to the project name is displayed.
Not editable.

2) Target PLC specification

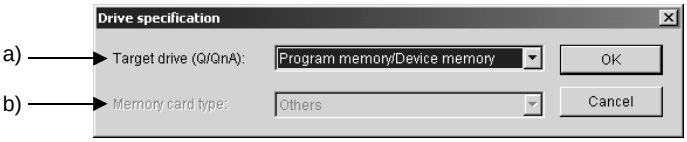
Specify the target PLC where data will be written.

3) Target file

All data within the target PLC CPU (data to be transferred) are displayed in tree format.

Clicking Update display displays the data in tree format.

Check the check box of the target data.
Click the data to display "Drive specification" dialog box. The destination drive and memory card type can be specified for each data in the dialog box.



[Setting Item]

a) Target drive (Q/QnACPU)

Select the drive where the data will be written from PC.

b) Memory card type (QCPU)

Select the destination memory card type.
Available when "Memory card (ROM)" is selected in "Target drive" section above.

Parameter + Program button:

Click the button to check the check boxes of project parameters and all programs.

Select all button: Click the button to check the check boxes of all data.

Cancel all button: Click the button to uncheck the check boxes of all data.

4) Execute button

Click the button to write and save the data specified in "Target file" section.

5) Relevant functions

Remote operation button:

Click the button to perform a remote operation of the PLC CPU.
For details, refer to Section 10.1

PLC memory clear button:

Click the button to clear the PLC CPU memory.
For details, refer to Section 7.5.

PLC memory format button:

Click the button to format the PLC CPU memory
For details, refer to Section 7.5.

6) Update display button

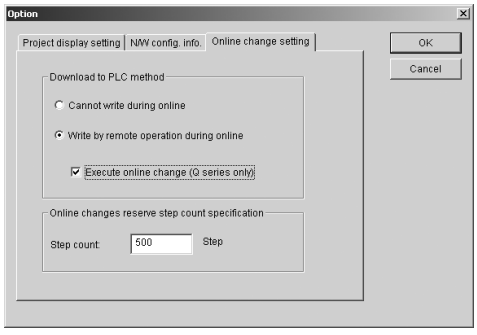
Click the button to update the target file display.

7) File register range specification (Q/QnACPU)
Specify the available file register range (0 to 1042131).

8) File register read specification (ACPU)
Specify the file register to be read.
Block No. (1 to 256) can be entered only when "Extension file register" is selected.

POINT

- Label program
  When using Q/QnACPU, label programs that are not compiled cannot be written to PLC.
  Note that global variables, labels, local variables cannot be written to PLC.
- Device comment when ACPU is specified.
  Device comments cannot be written to PLC if the comment range settings are not made.
- Device memory
  The file register range must be set when data is written into memory other than program memory/device memory (QCPU (Q mode) or Internal RAM/device memory (QnACPU).
- Others
  When target project and destination PLC CPU differ in PLC type, the project cannot be written to the PLC CPU.
- "Download to PLC" dialog box will not appear when the download to PLC function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- Online change setting (Specific to Q/QnACPU)
  Select [Tool]-[Option]→<<Online change setting>>.



  Select how to "Download to PLC method".
  For details of "Option", refer to Section 11.1.2.
- Data of all or a station can be written to PLC by drag and drop.
- When selecting projects arbitrarily and writing a batch of them to PLC, make sure to relate target names and projects (by referring to Section 7.9) and then perform the PLC batch operation (by referring to Section 7.8).

7.7 Deleting PLC data

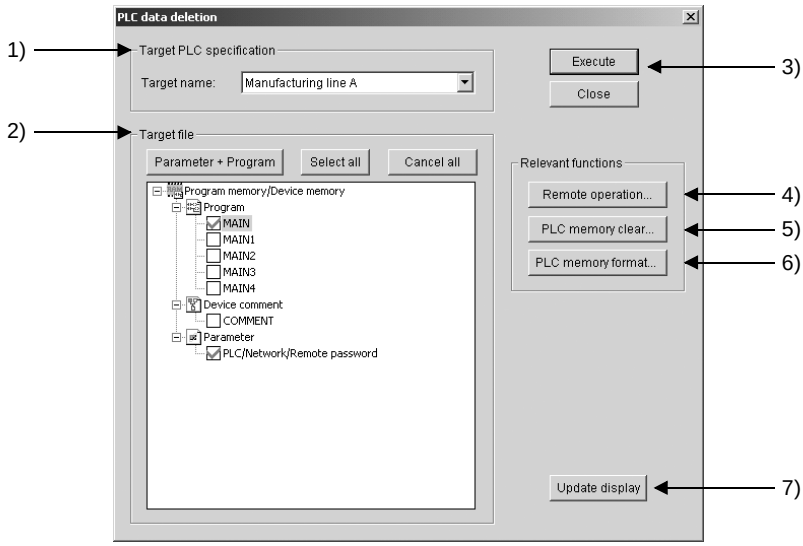
[Purpose]

Delete the specified data from PLC CPU.
This operation is not available for A/FXCPU. Only relevant functions are available.

[Operation Procedure]

[Project] → [PLC Data deletion]

[Setting Screen]



[Setting Item]

1) Target PLC specification

Select the target name.

2) Target file

All data within the target PLC CPU selected in "Target PLC" section are displayed in tree format.

Clicking [Update display] displays the data in tree format.

[Parameter + Program] button:
Click the button to check the check boxes of project parameters and all programs.

[Select all] button: Click the button to check the check boxes of all data.

[Cancel all] button: Click the button to uncheck the check boxes of all data.

Alternatively, each check box can be directly checked/unchecked.

3) [Execute] button

Click the button to delete data as set using above buttons.

4) [Remote operation] button

Click the button to perform a remote operation of the PLC CPU.
For details, refer to Section 10.1.

5) Clear PLC memory button

Click the button to clear the PLC CPU memory.
For details, refer to Section 7.5.

6) Format PLC memory button

Click the button to format the PLC CPU memory
For details, refer to Section 7.5.

7) Update display button

Click the button to display the target PLC CPU data in the target file field.

POINT

- "PLC data deletion" dialog box and "Remote operation" dialog box will not appear when the PLC data delete and remote operation functions have been set to be disabled in "Security setting".
- The following data, programs, parameters, device comments, device initial values and device memory (file register) can be deleted.

7.8 PLC Batch Operation

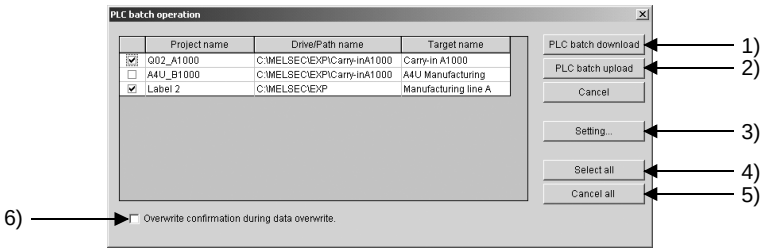
[Purpose]

Read or write a batch of selected projects to PLC CPU.
Relate target names and project names by referring to Section 7.9 in advance.

[Operation Procedure]

[Project] → [PLC batch operation]

[Setting Screen]



[Setting Item]

1) PLC batch down load button

Click the button to write the data of which check box has been checked at a time.

2) PLC batch up load button

Click the button to read the data of which check box has been checked at a time.

3) Setting button

Click the button to display "Inter-connect Target name and Project" dialog box.
Relate target names and projects.
For details, refer to Section 7.9.

4) Select all button

Check the button to check all check boxes; all projects are to be transferred at a time.

5) Cancel all button

Check the button to uncheck all check boxes.

6) "Overwrite confirmation during data overwrite"

By tuning the option ON, a message appears to confirm if the data saved with the same name will be overwritten or not when reading/writing each data from/to PLC.

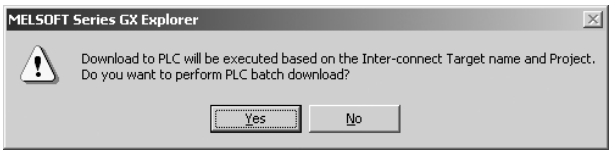
POINT

- "PLC batch operation" dialog box will not appear when the PLC batch operation function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- Specify the step to be reserved for online change when writing to PLC by referring to Section 11.1.2 Option setting.
- The cells including non-existing or inapplicable target names are displayed in red.
  The corresponding check boxes cannot be selected.
- Target names and project names cannot be edited from the Inter-connect target name and project list.

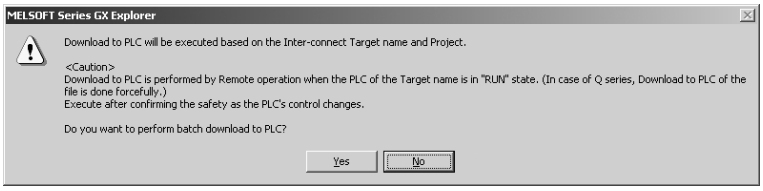
[Operation Procedure]

The following explains how to write a batch of projects to PLC CPU.

1. When target names and projects have been related, the relation list appears on "PLC batch operation" dialog box.
   When the relation has not been made, click Setting in "PLC batch operation" dialog box to display "Inter-connect Target name and Project" dialog box, and make the relation settings.
   For setting details, refer to Section 7.9.
2. Select the target projects in "PLC batch operation" dialog box by checking the check boxes.
3. Click PLC batch down load.
4. A dialog box appears to confirm if the projects will be written to PLC CPU at a time.


MELSOFT Series GX Explorer
Download to PLC will be executed based on the Inter-connect Target name and Project.
Do you want to perform PLC batch download?
Yes
No

The following confirmation dialog box appears if "Write by remote operation during online" has been checked in "Option" setting.


MELSOFT Series GX Explorer
Download to PLC will be executed based on the Inter-connect Target name and Project.
<Caution>
Download to PLC is performed by Remote operation when the PLC of the Target name is in "RUN" state. (In case of Q series, Download to PLC of the file is done forcefully.)
Execute after confirming the safety as the PLC's control changes.
Do you want to perform batch download to PLC?
Yes
No

If a password/keyword has been set for the PLC CPU, enter the password/keyword and click Execute to write to the PLC CPU.

POINT

- When the PLC is running and "Cannot write during online" has been checked in "Option" setting, PLC batch down load will not be executed.
  For "Option" setting, refer to Section 11.1.2.
- The PLC batch up load operation is similar to the PLC batch down load operation.
  However, note that a dialog box does not appear to confirm if the PLC batch up load will be executed, as the operation is irrelevant to "Option" setting.

7.9 Relating a Target Name and a Project

[Purpose]

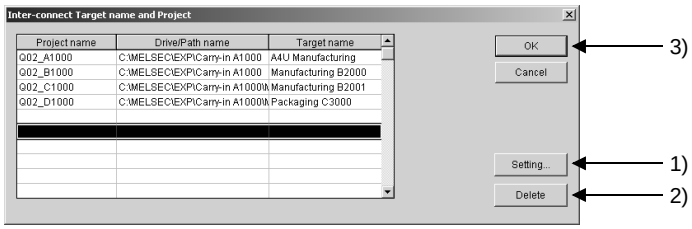
Relate target names and projects.

This enables a batch of projects within all/multiple stations or project(s) to be PLC batch up load/down load.

[Operation Procedure]

[Project] → [Inter-connect Target name and Project]

[Setting Screen]



[Setting Item]

1) Setting button

Click the button to display "Advanced settings" dialog box, set the data relation.

Up to 64 relations can be set.

When adding new relations, select a blank line and click Setting.

When changing a registered relation setting, select the corresponding line and click Setting.

For the relevant detailed settings, refer to Section 7.9.1.

2) Delete button

Click the button to delete the selected lines.

3) OK button

Click the button to save the relation settings and close the dialog box.

POINT

- When the relation setting that includes no target name or target names is deleted, or a target name is set to unusable in "Security" setting, a warning dialog box appears and the back ground of "Target name" cell turns red.

  If OK is clicked at step 3), the following confirmation dialog box appears.

  Yes : Click the button to delete the relation setting that includes no target name and close the dialog box.

  No : Click the button to close the dialog box without deleting the relation setting that includes no target name.

7.9.1 Detailed settings for target name and project relation

[Purpose]

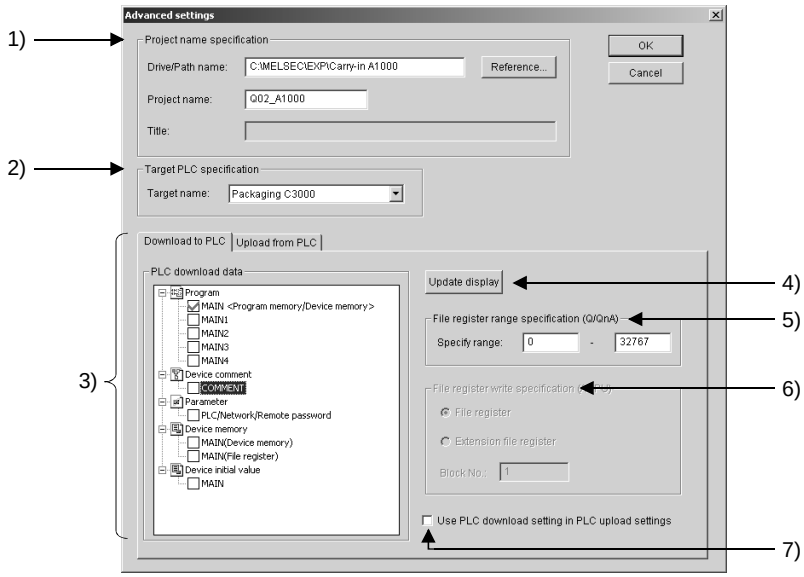
Make detailed settings for the relation between project and target name.

[Operation Procedure]

Select [Project] → [Inter-connect Target name and Project] → Setting button within "Inter-connect Target name and Project" dialog box.

[Setting Screen]

<<Download to PLC>>



[Setting Item]

1) Project name specification

The drive/path name, project name and title corresponding to the line selected in "Inter-connect Target name and Project" dialog box are displayed.

Alternatively, select the drive name/path name from the options (provided by clicking Reference button).

Drive/path name:	When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3. However, FTP path cannot be set.
Project name:	Select the project name to be related. When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3. Up to 150 characters are used for both drive/path name and project name.
Title:	The title set for the project name is displayed. Not editable.

2) Target PLC specification

The target name selected in "Inter-connect Target name and Project" dialog box is displayed.

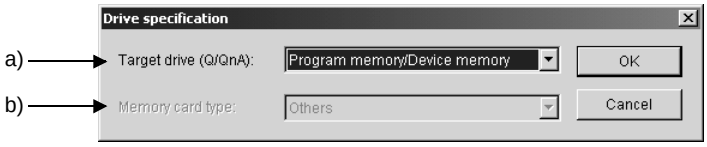
Note that target names other than those automatically generated from the network configuration information due to Upload from PLC can be specified.

3) PLC download data

Specify the data to be written to PLC and the destination drive.

The data to be written to PLC is displayed in tree format.

Clicking the data to display "Drive specification" dialog box, and specify the destination drive and memory card type.



[Setting Item]

a) Target drive (Q/QnACPU)

Select the target drive.

b) Memory card type (QCPU)

Available when "Memory card (ROM)" is selected in "Target drive" section above.

4) Update display button

Click the button to update the target file display.

5) File register range specification (Q/QnACPU)

Specify the available file register range (0 to 1042131).

6) File register read specification (ACPU)

Specify the file register to be read.

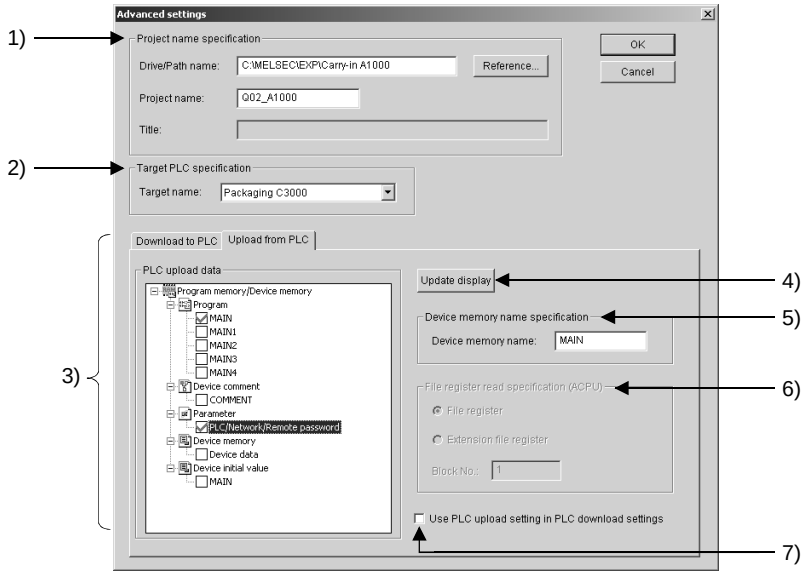
Block No. (1 to 256) can be entered only when "Extension file register" is selected.

7) Use PLC download setting in PLC upload settings

Check the check box to use the Download to PLC settings for the Upload from PLC settings.

If the option is checked, << Upload from PLC>> cannot be selected.

<< Upload from PLC>>



[Setting Item]

1) Project name specification

For details, refer to item 1) in <<Download to PLC>>.

2) Target PLC specification

For details, refer to item 2) in <<Download to PLC>>.

3) PLC upload data

Specify the data to be transferred.

4) Update display button

Click the button to update the target file display.
The data will be displayed in tree format.

5) Device memory name specification

Set the name used in the destination project.
Up to 8 characters can be input.

6) File register read specification (ACPU)

Specify the file register to be read.
Block No. (1 to 256) can be entered only when "Extension file register" is selected.

7) Use PLC upload setting in PLC download settings

Check the check box to use the Upload from PLC settings for the Download to PLC settings.
If the option is checked, << Download to PLC>> cannot be selected.

7.10 Keyword/Password

7.10.1 Keyword/Password registration

7.10.1 (1) Keyword registration (QnA/A/FXCPU)

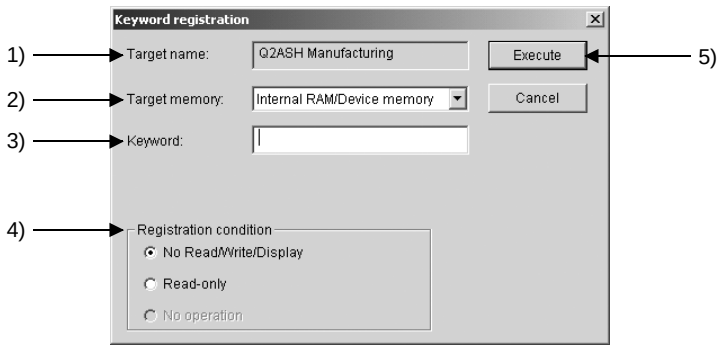
[Purpose]

Set a keyword to protect the data within PLC CPU (each memory).

[Operation Procedure]

[Project] → [Keyword] → [Keyword registration] → Select the target name for keyword setting.

[Setting Screen]



[Setting Item]

1) Target name

The target name for keyword setting is displayed.
Not editable in the dialog box.

2) Target memory

Select the target memory for keyword setting.
Fixed to "Internal RAM/Device memory" for A/FXCPU.

3) Keyword

Enter a keyword arbitrarily.
The applicable character type and max. number of characters for input differs with the PLC CPU.

ACPU: Numeric character and A to F (Up to 6 characters).
QnACPU: Numeric character (Up to 6 characters).
FXCPU: Numeric character and A to F (Up to 8 characters).

4) Registration condition

Set the operation condition of the target memory for which a keyword has been set.
The available conditions differ with the PLC CPU.

Read/Write/Display: Read, write, consistency check, delete and list display are disabled.
Read-only: Operations other than read are disabled.
No operation: All operations are disabled.

The following shows the applicable registration conditions for each series.

PLC	Read/Write/Display protection	Read-only	No operation
A	—	—	○
QnA	○	○	—
FX	—	—	○

○: Applicable —: N/A

5) Execute button

Click the button when the settings are made.
The keyword will be set for the target data or file.
Make sure to delete the set keyword when setting a new one or changing the condition.
If different keyword is entered with the previous one registered and the button is clicked, the following dialog box will appear.

POINT

- If you forget the entry code when using the A/FXCPU, all-clear the data in the memory cassette with "PLC all clear".
  With the QnACPU, format the PLC memory.
  However, note that regardless of whether you are using the A/QnA/FXCPU, all the data apart from the keyword is also deleted, and therefore all the data must be rewritten.
- On executing the registration condition function before releasing an keyword, the current entry code dialog box is automatically displayed.
  Enter the keyword and release it.
- Since the keyword is written directly into the PLC on registration, there is no need to write parameters or other data to the PLC.
  Note that the keyword becomes functional immediately after registration.
- With the A/FXCPU, parameters for which an keyword is registered can be written to the ROM.
- "Keyword registration" dialog box will not appear when the keyword registration function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.

POINT

- Password protection level designation for the FXCPU
  For devices capable of online operations with respect to the PLC, models such as the FX-10P and FX-20P permit the setting of three levels of protection for these operations. In cases where monitoring, setting changes, etc. are required to be done by an online device, set an entry code that takes this into consideration.
  - All operations prohibited (personal computer operation disabled)
    :A□□□□□□□ or ■□□□□□□□□
    Alphanumeric letter other than "A", "B", and "C"
  - Theft prevention (restricted to monitoring and changing the present value)
    :B□□□□□□□
  - Protection against erroneous writing (restricted to reading, monitoring and changing the present value)
    :C□□□□□□□

  In the part of the keyword, designate 7 alphanumeric digits selected from among A to F and 0 to 9.

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7.10.1 (2) Password registration (Specific to QCPU(Q mode)

Set a password for each program, comment, device initial value within a project.
Password setting is available for the project that is currently opened in the PLC CPU and GX Explorer.

Password and registration condition status for each operation

Operation target	Operation	Password and registration condition status
PLC CPU	Read from PLC	If passwords exist in the read source PLC, the password settings are also read.
	Write to PLC (to read source PLC)	Password settings are written to the write destination PLC.
	Write to PLC (to other than read source PLC)	Password settings are written to the write destination PLC.
	Write to PLC (read from IC card and write to PLC)	Password settings are written to the write destination PLC.
IC memory card	Read IC memory card	If passwords exist in the read source IC card, the password settings are also read.
	Write IC memory card (to read source IC memory card)	Password settings are written to the write destination IC memory card.
	Write IC memory card (to other than read source IC memory card)	Password settings are written to the write destination IC memory card.
	Write IC memory card (read from PLC and write to IC memory card)	Password settings are written to the write destination IC memory card.

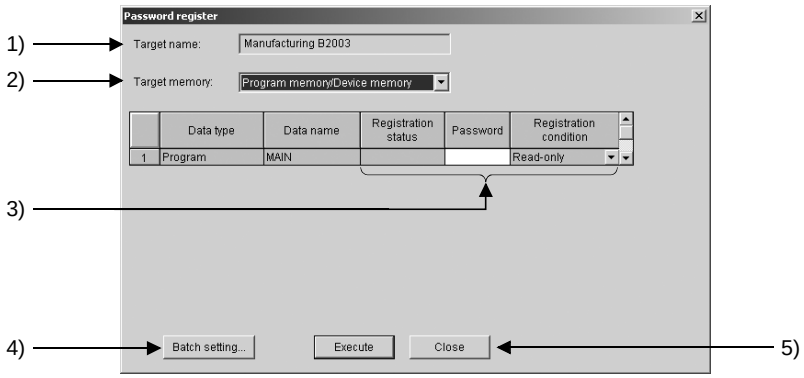
[Purpose]

Set a keyword to protect the data within PLC CPU (each memory).

[Operation Procedure]

[Project] → [Keyword] → [Keyword registration] → Select the target name for password setting.

[Setting Screen]



[Setting Item]

1) Target name

The target name for password setting is displayed.
Not editable.

2) Target memory

Select the target memory for password setting.

3) Registration status, Password, Registration condition

Registration status: When any password has already been set, "*" is displayed.

Password: Enter a password arbitrarily. 4 alphanumeric characters of ASCII code will be registered. (Case-sensitive)

Registration condition: Set the operation condition of the target memory for which a password has been set.

- Read-only: Write operation is disabled by password.
- No Read/Write: Read/Write operation is disabled by password.
- Delete: Password delete.

4) Batch setting button

Click the button to set the same password and registration condition for batch of data.

[Setting Item]

a) Range

Specify the data range for setting the same password.

b) Password

Register 4 alphanumeric characters of ASCII code.
Case-sensitive.

c) Registration condition

Refer to item 3).

5) Execute button

Click the button when the settings are made.
The password will be set for the target data or file.

POINT

- "Password registration" dialog box will not appear when the keyword registration function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- If you forgot the password Format the PLC memory.
  However, this also clears all data including the passwords, all data should be written once more.
- When erasing the passwords in the project data Choose "Clear" as the registration condition in the password setting for Write IC memory card or Write to PLC, and save the project.
- "Checking password" appears during communications with the PLC, but it is also displayed when no password has been set.
  Checking password : Passwords and setting conditions of all files are checked.

7.10.2 Keyword/Password delete

[Purpose]

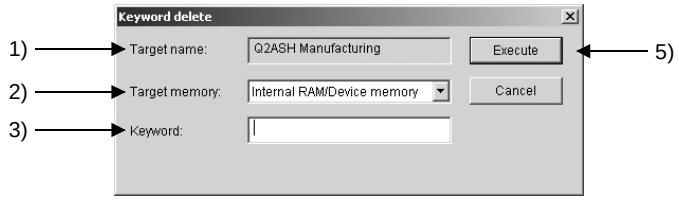
Delete the set keyword/password.

[Operation Procedure]

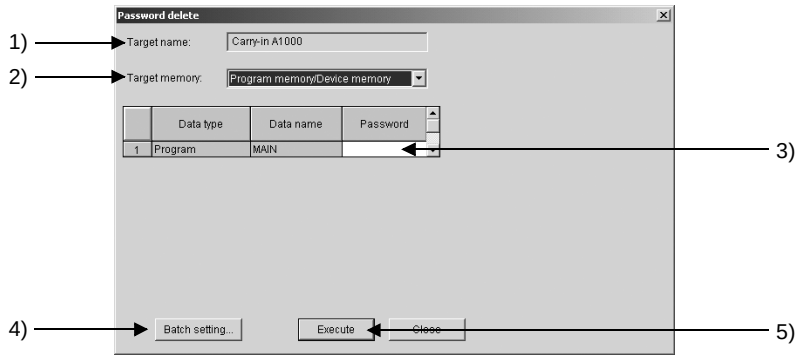
[Project] → [Keyword] → [Keyword delete] → Select the target name of which keyword/password is to be deleted.

[Setting Screen]

A/QnA/FXCPU



QCPU



[Setting Item]

1) Target name

The target name of which keyword/password is to be deleted is displayed. Not editable.

2) Target memory

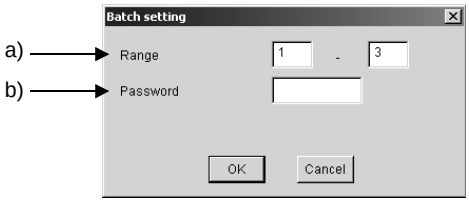
Select the target memory of which keyword/password is to be deleted.

3) Keyword/Password

Enter the keyword/password set for the target memory.

4) Batch setting button

Click the button to delete the password and registration condition set for a batch of data.



[Setting Item]

a) Range

Specify the data range for deleting the password and registration condition set for a batch of data.

b) Password

Enter the currently registered password (case-sensitive).

5) Execute button

Click the button to delete the keyword/password set for the currently selected target memory.

POINT

- "Keyword delete" dialog box will not appear when the keyword delete function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.

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7.11 Search

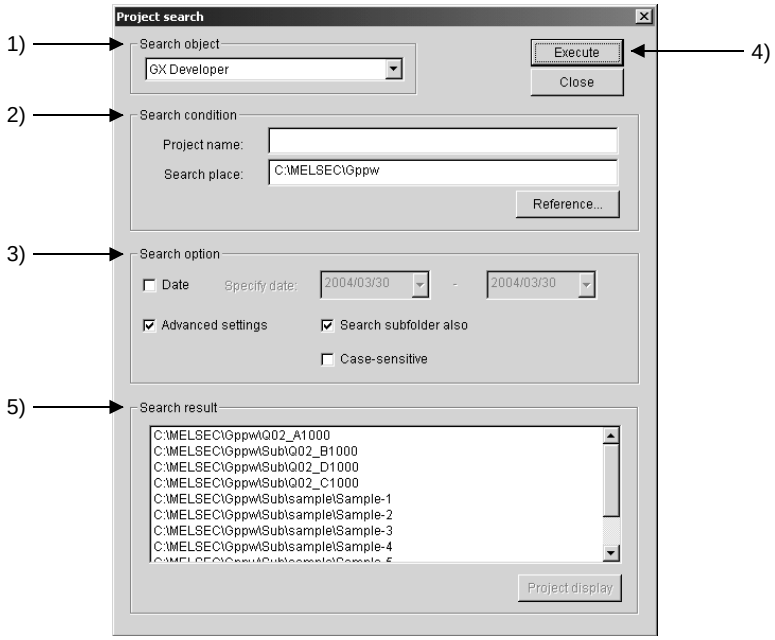
[Search]

Search for the project specified in the PC side window.

[Operation Procedure]

[Project] → [Search]

[Setting Screen]



[Setting Item]

1) Search object

Select a search object, i.e., the software used to create the target project, from GX Developer, GX Configurator-CC, GX Configurator-QP, GT Designer2 and PX Developer.

2) Search condition

Project name: Enter the project name to be searched. (Not necessarily required.)
However, for GX Configurator, enter each file name.
Wildcard ("*","?") can be used.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

Search place: Specify the place to be searched for the project name by path name.
Alternatively, select a local drive, network drive, system data name or FTP site name from the options in "Search place" dialog box, which appears by clicking Reference button.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.

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3) Search option

The range for project search can be limited by specifying the date and detail setting.

4) Execute button

Click the button to start searching; it turns Stop during search.

When interrupting the search, click Stop.

5) Search result

Searched projects are displayed by full-path.

Double-click a full path, or select a full path and click Project display .

The corresponding project will appear on the PC side window.

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7.12 Consistency Check

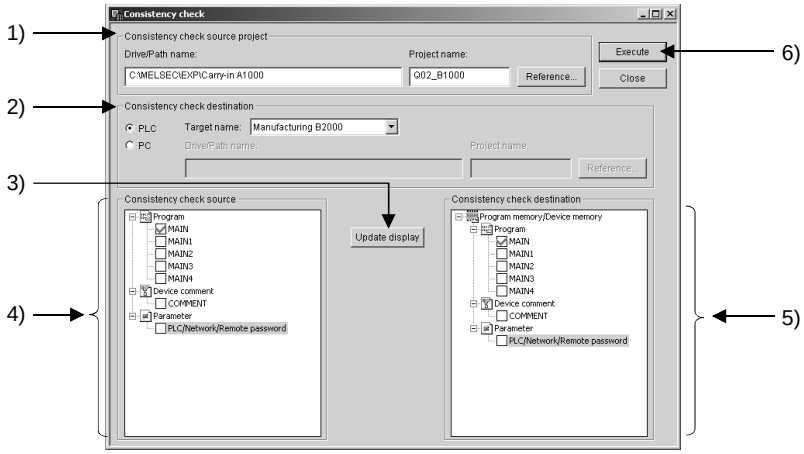
[Purpose]

Compare a program, parameter or device comment within PC with data within PLC CPU to check consistency between them. Consistency check of data within PC is also available.

[Operation Procedure]

[Project] → [Consistency check]

[Setting Screen]



[Setting Item]

1) Consistency check source project

Specify a drive/path name and project name for consistency check source. (PC side project only)
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.
Alternatively, select the drive name/path name from the options provided in "Consistency check source project setting" dialog box that appears by clicking Reference button.

2) Consistency check destination

Specify project data within the PC side window or PLC side window for consistency check object.
When selecting "PLC", set the target name.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.
When selecting "PC", set the drive/path name and project name.
Alternatively, select the drive name/path name from the options provided in "Consistency check destination setting" dialog box that appears by clicking Reference button.

3) Update display button

Click the button to display the data of the specified consistency check source and consistency check object in tree format.
The tree view will be automatically updated when the consistency check source or consistency check object is specified by either of the following operations.
Data is dragged from the PC side window or PLC side and dropped onto the tree view.

Data is selected by clicking Reference.

4) Consistency check source

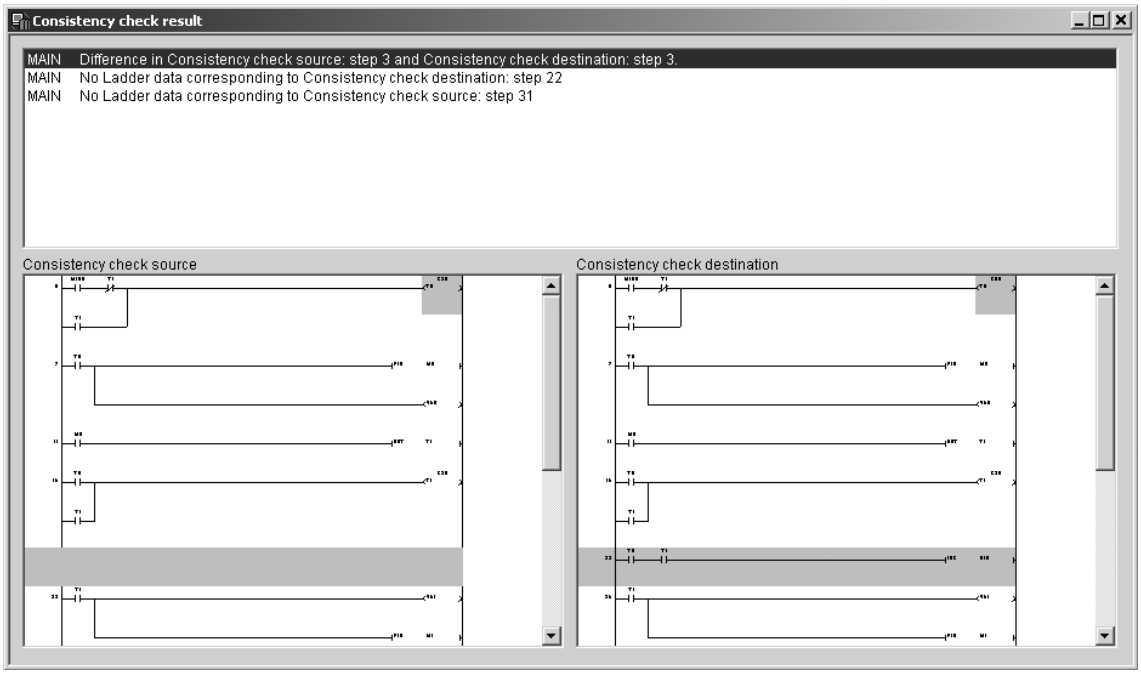
The data specified in 1) are displayed in tree format.
Check the check box of the data to be compared.

5) Consistency check destination

The data specified in 2) are displayed in tree format.
Check the check box of the data to be compared.

6) Execute button

Click the button to start consistency check and display "Consistency check result" dialog box.


Consistency check result
MAIN Difference in Consistency check source: step 3 and Consistency check destination: step 3.
MAIN No Ladder data corresponding to Consistency check destination: step 22
MAIN No Ladder data corresponding to Consistency check source: step 31
Consistency check source
Consistency check destination

Differences in consistency, ladders of both consistency check source and consistency check object are displayed.
The steps that correspond to the differences in consistency are inverted in ladders.

POINT

- "Consistency check" dialog box will not appear when the consistency check function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- A project within the PC side window can be dragged and dropped onto the tree view in "Consistency check" dialog box, and specified for consistency check source and consistency check object.
- A project within the PLC side window can be dragged and dropped onto the tree view in "Consistency check" dialog box, and specified for consistency check object.
- In the case of consistency check result of comments or parameters, only "There is no difference." is displayed.
- Clicking a line in the above consistency check result jumps to the corresponding ladder line.

7.13 Rename

[Purpose]

Change the project name specified in the PC side window.

[Operation Procedure]

Specify the project name to be renamed. → [Project] → [Rename] → As the name is inverted, enter a new name arbitrarily.

7.14 Delete

[Purpose]

Delete the specified project.

[Operation Procedure]

Specify the project to be deleted. → [Project] → [Delete].

POINT

- Data cannot be deleted when the delete function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- When deleting system data names or FTP site names, note that they will be deleted but files (project data or other data) under them will remain.
- Objects that cannot be deleted
  Project display field: drive
  Project configuration display field: data type, data name

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7.15 Backup

[Purpose]

Back up the specified project. Even if the project is corrupted, it can be restored as its backup copy is provided. Backup destination is fixed and need not be specified.

It is possible to specify whether the project will be overwritten for each time in the dialog box.

For backup list, refer to Section 7.17 Backup Arrangement.

[Operation Procedure]

Specify a project within the PC side window. → [Project] → [Backup]

POINT

- "Backup" dialog box will not appear when the backup function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- Backup is disabled while the PC side window is inactive.
- If the specified project is read-only, it is backed up as it is.
- Objects that cannot be backed up
  Drive, system data name, FTP site name, general-purpose file

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7.16 Restore

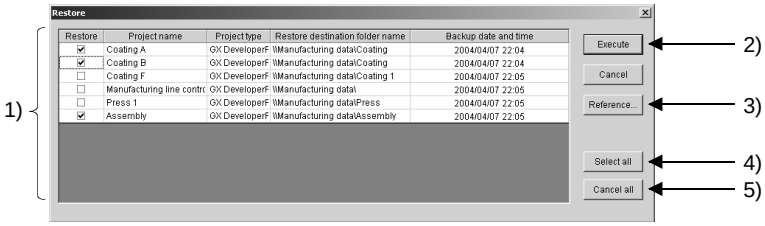
[Purpose]

Restore the specified project (Restore the backed up project).

[Operation Procedure]

[Project] → [Restore]

[Setting Screen]



[Setting Item]

1) Restore list

Backed up projects are displayed.
Check the "Restore" check boxes of projects to be restored.
When directly entering a drive/path name, double-click a cell of "Restore destination folder name" field.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

2) Execute button

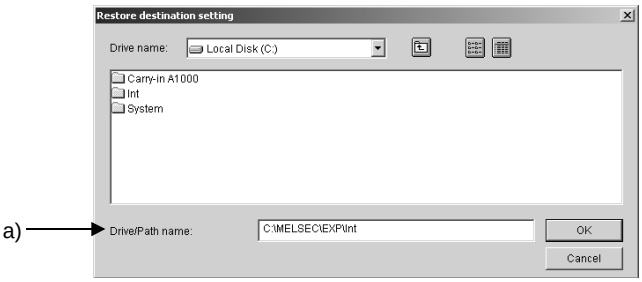
Click the button to restore projects of which "Restore" check boxes have been checked; the projects will be restored in cells of "Restore destination folder name" field.

3) Reference button

Click the button when specifying the restore destination.

Click the cell of which restore destination to be changed, click Reference.

As "Restore destination setting" dialog appears, specify the restore destination.



[Setting Item]

a) Drive/path name

Specify the restore destination for the specified project.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.

4) Select all button

Click the button to check all "Restore" check boxes, and all project are to be restored.

5) Cancel all button

Click the button to uncheck all "Restore" check boxes.

POINT

- "Restore" dialog box will not appear when the restore function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.
- Only local drives and network drives can be specified for restore destination.

7.17 Backup Arrangement

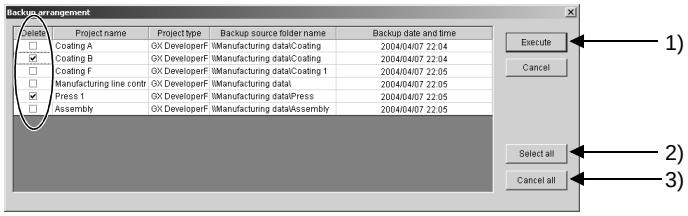
[Purpose]

Delete the specified one from backed up projects.

[Operation Procedure]

[Project] → [Backup arrangement]
Check the check boxes of projects to be deleted.

[Setting Screen]



[Setting Item]

1) Execute button

Click the button to delete projects of which "Delete" check box have been checked.

2) Select all button

Click the button to check all "Delete" check boxes, and all projects are to be deleted.

3) Cancel all button

Click the button to uncheck all checked "Delete" check boxes.

POINT

- "Backup arrangement" dialog box will not appear when the backup arrangement function has been set to be disabled in "Security setting".
  For details of "Security setting", refer to Section 11.1.3.

7.18 Running the Relevant Application

[Purpose]

Start the application corresponding to the project from GX Explorer.

[Operation Procedure]

Select a project within the PC side window. → [Project] → [Run relevant application]

POINT

- The following shows applications and corresponding versions that can be started from GX Explorer.
  GX Developer Ver.7 or later
  GX Configurator-CC Ver.1 or later
  GX Configurator-QP Ver.2 or later
  PX Developer Ver.1 or later
  GT Designer2 Ver.1 or later
- When a PLC name in the PLC side window device details display field is selected or data name in the memory configuration display field is selected, only GX Developer can be started.
- When any project in an FTP site name is selected, the relevant application will not be started.
- When the timing chart diagram in the PC side window detail display field is selected, or either of trace data or snapshot data is selected, the GX Explorer function can be started.
- The relevant application can be started also by double-clicking each project within the PC side window.
  In the case of PLC side window, only GX Developer can be started.
- Double-clicking a ladder of ladder monitor starts GX Developer.

7.19 Displaying Property Information

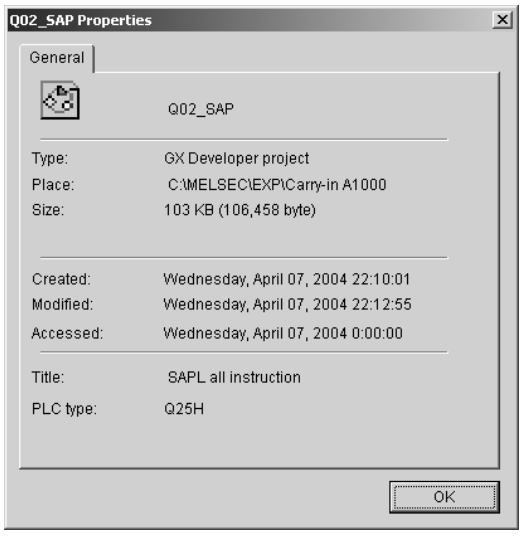
[Purpose]

Confirm the specified project information.

[Operation Procedure]

[Project] → [Property]

[Setting Screen]



8 CONNECTION TARGET SPECIFICATION

This chapter explains the operations that can be executed from [Object] menu: setting for the network configuration analysis: setting a PLC CPU as connection target: operation to connect to a PLC CPU in a remote location.
In "Network configuration analysis specification" dialog box, make the settings in order that the network configuration to the target station will be analyzed.
In "Target name" dialog box, set the connection route to the target PLC CPU.

8.1 Network Configuration Analysis Specification

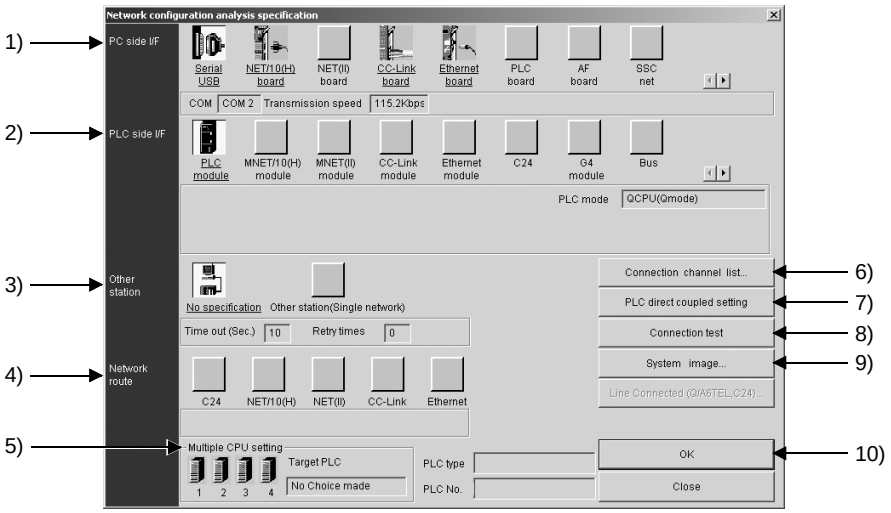
[Purpose]

Make the settings in order that the network configuration to the target station will be analyzed.
Set the configuration information to the target station; the information does not need to cover the last station.

[Operation Procedure]

[Object] → [Network configuration analysis specification] → Specify the target PLC series.

[Setting Item]



POINT
• The icon with underlined name leads to the detail setting dialog box: double-clicking it displays a dialog box for detail setting.

[Setting Item]

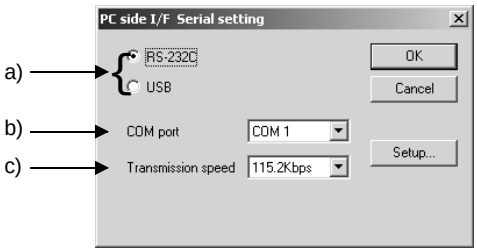
1) PC side I/F

Select an interface of PC.

For communication precautions, refer to POINT in Section 8.2.3 (2).

The following shows the detail setting dialog box.

QCPU



[Setting Item]

a) RS-232C/USB

Select a connection method. "USB" is selectable for Q mode only.

b) COM port

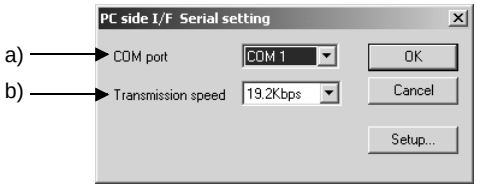
When selecting "RS-232C", specify a COM port for connecting an RS-232C cable.

c) Transmission speed

Specify the transmission speed when "RS-232C" is selected.

For high speed communication at 57.6/115.2kbps, use a PC that supports 57.6/115.2kbps transmission speed.

QnA/A/FXCPU



[Setting Item]

d) COM port

Specify a COM port for connecting an RS-232C cable.

e) Transmission speed

Specify the transmission speed.

The selectable transmission speed depends on the PLC series and PLC type.

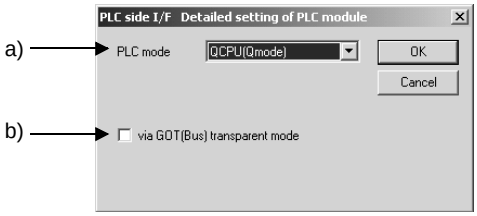
For QnACPU, the PLC CPU module of function version B or later can communicate at 38.4kbps.

Check the function version by referring to Appendix 3.

2) PLC side I/F

Select a module for connecting PLC to PC.

The following shows the detail setting dialog box.



[Setting Item]

a) PLC mode

Select the PLC series of PLC CPU to be connected to GX Explorer.

Via GOT(Bus) transparent mode

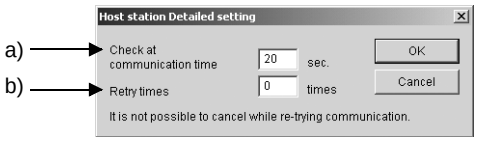
b) Check the check box to use the GOT transparent function.

For details of the GOT transparent function, refer to "GOT-A900 Series User's Manual (GT Works2 Version1/GT Designer2 Version1 compatible Connection System Manual)".

3) Other station

This item is automatically selected depending on the PC side I/F and PLC side I/F settings. (Selecting operation is not required.)

The following shows the detail setting dialog box.



[Setting Item]

a) Communications time check

Specify the time length of communication check (1 to 9999 seconds).

b) Retry times

Specify the number of times for communication retry (0 to 5 times).

If the PLC CPU is powered off or hardware reset is performed during ladder monitor, it will take long time until a communication error appears.

Until the error appears, during execution is displayed in Monitor status.

The longest time until the error appears can be found by the following expression.

(Time specified for communications time check) × 3 × (Count specified for the number of retries + 1)

For example, when the communications time check is specified as 20 seconds and the number of retries as 1 times, the resultant time is (20 seconds) × 3 × (1 + 1) = 120 seconds, and the error appears after a maximum of 120 seconds have elapsed.

4) N/W comm. Path

This item is automatically selected depending on the PC side I/F and PLC side I/F settings. (Selecting operation is not required.)
Set the network No. and station No.
The setting items depend on the selected network communication path.

5) Multi-PLC

Set this item when connecting to a multiple CPU system.
For details, refer to Section 8.2.3.

6) Connection channel list button

Select a connection path from the list that appears by clicking the button.
As the connection path is automatically set in the setting screen, no complex settings are unnecessary even for complicated system.

7) PLC direct coupled setting button

Click the button to change to the host station.

8) Communication test button

Click the button to test if the PC can normally access the set PLC CPU.
When the test results in normal access, the target PLC CPU model is displayed in the PLC model field.

9) Syatem image button

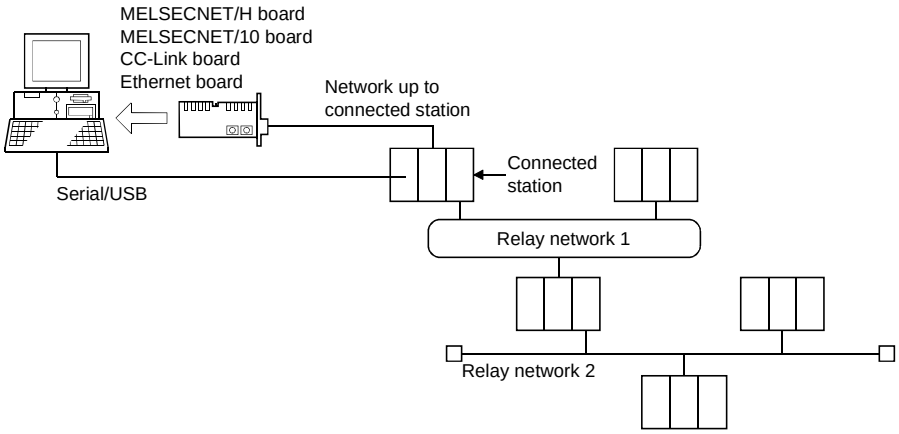
Click the button to show the setting details and communication path by illustration.

10) OK button

Click the button to close "Network configuration analysis specification" dialog box and start the network configuration analysis.
For details of network configuration information update, refer to Section 5.3.3.

8.1.1 Network configuration information display/operation range

This section explains the network configuration information display/operation range and relevant precautions.
The following shows the display/operation range of up to the connected station/relay network 1/relay network 2given in (1) to (3).



(1) When the connected station is the QCPU (Q mode)

PC Side I/F in Target Setup	Network UP to Connected Station	Relay Network 1	Relay Network 2	Display and Operation of Network Configuration Information		
				QCPU (Q mode)	QnA CPU	ACPU QCPU (A mode)
Serial/USB	—	MELSECNET/H*1 MELSECNET/10*1	—	○	○	○
	—	MELSECNET/H*1 MELSECNET/10*1	CC-Link*2	○	○	○
	—	CC-Link*2	—	○	○	○
	—	CC-Link*2	MELSECNET/H*1 MELSECNET/10*1	—	—	—
MELSECNET/H board MELSECNET/10 board	MELSECNET/H*1 MELSECNET/10*1	—	—	○	○	○
	MELSECNET/H*1 MELSECNET/10*1	CC-Link*2	—	—	—	—
CC-Link board	CC-Link*2	—	—	○	○	○
	CC-Link*2	MELSECNET/H*1 MELSECNET/10*1	—	—	—	—
Ethernet board	Ethernet	MELSECNET/H*1 MELSECNET/10*1	—	○	○	○
	Ethernet	MELSECNET/H*1 MELSECNET/10*1	CC-Link*2	○	○	○
	Ethernet	CC-Link*2	—	○	○	○
	Ethernet	CC-Link*2	MELSECNET/H*1 MELSECNET/10*1	—	—	—

*1: Up to 7 relay stations and 8 networks can be displayed/operated when the routing parameters have been set.
Only the network of the connection can be displayed/operated when the routing parameters have not been set.
Up to 1 gate and 2 networks can be displayed/operated when the connection station is a remote I/O station.
*2: When the connection station and relayed station are the QCPU master stations.

○: Display/operation enabled
—: Display/operation disabled

(2) When the connection station is the QnACPU

PC Side I/F in Target Setup	Network UP to Connection Station	Relay Network 1	Relay Network 2	Display and Operation of Network Configuration Information		
				QCPU (Q mode)	QnACPU	ACPU QCPU (A mode)
Serial	—	MELSECNET/H*1 MELSECNET/10*1	—	※	○	—
MELSECNET/H board MELSECNET/10 board	MELSECNET/H*1 MELSECNET/10*1	—	—	※	○	—
CC-Link board	CC-Link	—	—	※	—*2	—
	CC-Link	MELSECNET/H*1 MELSECNET/10*1	—	—	—	—
Ethernet board	Ethernet	MELSECNET/H*1 MELSECNET/10*1	—	※	○	—

*1: Up to 7 relay stations and 8 networks are permitted when the routing parameters have been set.
Only the network of the connection station is permitted when the routing parameters have not been set.

*2: Display/operation enabled for the connection station only.

○: Display/operation enabled
—: Display/operation disabled
※: Disable enabled, operation inhibited (Refer to Section 8.1.2.)

(3) When the connection station is the ACPU or QCPU (A mode)

PC Side I/F in Target Setup	Network UP to Connection Station	Relay Network 1	Relay Network 2	Display and Operation of Network Configuration Information		
				QCPU (Q mode)	QnACPU	ACPU QCPU (A mode)
Serial	—	MELSECNET/H*1 MELSECNET/10*1	—	—	—	○
MELSECNET/H board MELSECNET/10 board	MELSECNET/H*1 MELSECNET/10*1	—	—	—	—	○
	MELSECNET/H*1 MELSECNET/10*1	MELSECNET/H*1 MELSECNET/10*1	—	—	—	○

*1: Up to 7 relay stations and 8 networks are permitted when the routing parameters have been set.
Only the network of the connection station is permitted when the routing parameters have not been set.

○: Display/operation enabled
—: Display/operation disabled

POINT

- Setting the MELSECNET/H, MELSECNET/10 (including Ethernet) routing parameters enables the other station PLC to be accessed within the range of the network system specifications.
- In the case of FXCPU, only the connected station can be analyzed.
  Note that "FX0S" is displayed as "FX0N" in GX Explorer.
- The information of network configuration saved using older version cannot be read due to version incompatibility.
- The display range of network configuration information differs with the range that can be specified as the target name. By setting as target name, the PLC CPU outside the display range of network configuration information can be selected in the target name filed of each function and then operated.
  For target name setting range, refer to Appendix. 1.

8.1.2 Notes on Network Configuration Information

(a) When the network consists of different PLC series

Analyzing the network consisting of different PLC series takes much time to get the network configuration information.

(b) When MELSECNET/H, MELSECNET/10 exists in the network configuration

1) Display range when the connection station is the remote I/O station

If the MELSECNET/H remote I/O station is connected, the routing parameters cannot be set and up to two tiers can be analyzed.

2) Network configuration information getting time when the routing parameter setting is illegal

When the routing parameter setting is illegal, correct network analysis cannot be made and therefore it takes much time to get the network configuration information.

3) Display provided when the same network numbers exist

When there are the same network numbers, only the network whose information was acquired first can be displayed.

4) Routing parameters of the MELSECNET/H, MELSECNET/10 board

If the routing parameters have not been set to the MELSECNET/H, MELSECNET/10 board, a routing parameter error occurs and the network configuration information cannot be displayed.

5) Station type-based display when the keyword is set on the QnACPU

When the keyword has been set to the drive that stores the parameters on the QnACPU, the station type is displayed as described below.

Station Type	Display of GX Explorer
Remote master station, stand by station for Control station, Multiplexed remote master station, Parallel remote master station	Control station
Stand by station for Normal station, Multiplexed remote submaster station, Pallel remote submaster station	Normal station

6) Access to AnA/AnNCPU

AnA/AnNCPU can be accessed only when connected to the MELSECNET (II) or equivalent.

When the MELSECNET/10 routing parameters are set, AnA /AnNCPU in the same tier as where the PC that executes GX Explorer is connected can be accessed from GX Explorer.

If AnA/AnNCPU is in the tier other than above, the network configuration information is displayed, however, accessing them through download to/upload from PLC will result in a communication error.

(c) When CC-Link exists in the network configuration

1) PLC series and station type of relay station

Only when the relay station is the QCPU (Q mode) and master station, the network configuration is displayed. Any other CC-Link existing on a local station cannot be displayed.

2) Station type that can be displayed

Only the master, local and standby master stations are displayed. Remote I/O, remote device, intelligent device stations and CC-Link board cannot be displayed.

3) Remote I/O network mode and offline are not displayed

The remote I/O network mode and offline are not displayed since local stations, intelligent device station do not exist in those modes.

4) Function version of the QnA series master/local module

When the local station is the QnACPU, only the function version B or later can be displayed.

5) When multiplex remote master station/multiplex remote sub station is connected.

Although the multiplex remote sub station is displayed in the network analysis, online operations (functions included in [Confirm], [Operation] and [Diagnostics] menu) cannot be executed for that station.
Similarly, when the multiplex remote sub station is connected, online operations cannot be executed for the multiplex remote master station, although can be analyzed.

(d) PLC type display in GX Explorer

The following FXCPU and motion controllers (SCPU) are displayed in GX Explorer as shown below.

PLC type		Display in GX Explorer
FXCPU	FX_{0S}*1	FX_{0N}
Motion controller (SCPU)*2	A171SH	A2SH
	A172SH	A3N
	A173UH(S1), A273UH (S1)	A3U

*1: The access function is not restricted for this model.

*2: Write to PLC/read from PLC can also be performed for the projects of the PLC type that is the motion controller (SCPU).

(e) When "ACPU" is set in "Network configuration analysis specification" and QCPU (A mode) is actually connected

When the PLC series of target station is set to "ACPU" in "Network configuration analysis specification" dialog box, however, QCPU (A mode) is actually connected, the target station is displayed as A4U and can be operated as A4U.

(f) Access via Ethernet

When connecting to the PLC CPU via Ethernet, the Ethernet module may develop an error (COM.ERR.LED turns ON), if the routing parameters set for that Ethernet module include the information of non-exiting station.

(g) Restrictions on/notes for communications

There are the following restrictions on/notes for communications to be made with the PLC CPU displayed in the network configuration information.

Item	Restriction/Note
PLC communication	During communication, e.g. PLC read/PC write, do not disconnect the cable for connection of the personal computer and PLC CPU and connect it another PLC.
Use of other software at the same port	It is not possible to communicate with a PLC while using GPPA/APPQ at the same port. Either use a different port or quit GPPA/GPPQ (close the DOS prompt too), before using the port.
	When using the Windows version of, for example, SW[ ]NIW-GOT800P, simultaneous access to the same port is not possible. Communication with one of the packages only is possible.

(h) When the routing parameters have been set for a Ethernet module

When the routing parameters have been set for a Ethernet module, GX Explorer regards it as MELSECNET/H, MELSECNET/10 and therefore communicates with all the stations at network analysis.
The device connected through Ethernet is not displayed because it is not to be analyzed by GX Explorer.
Errors (Error code: C033H, C080H, C082H) occur and COM error is lit. However, this will not effect on the system operation.
You can reset the above COM error by clicking the Clear history button and the COM. ERR off button on the "Error history" tab screen for Ethernet diagnosis.

POINT

- When QnACPU is connected as the target station, the QCPU within the network is displayed as Q4ACPU.
  Therefore, accessing the QCPU (Q mode) as QnACPU cannot acquire the information of the routed network normally.
  Do not execute online operations (functions included in [Confirm], [Operation] and [Diagnostics] menu) for the QCPU (Q mode) displayed as Q4ACPU, as the QCPU (Q mode) may not operate normally.

8.2 Connection Target Name

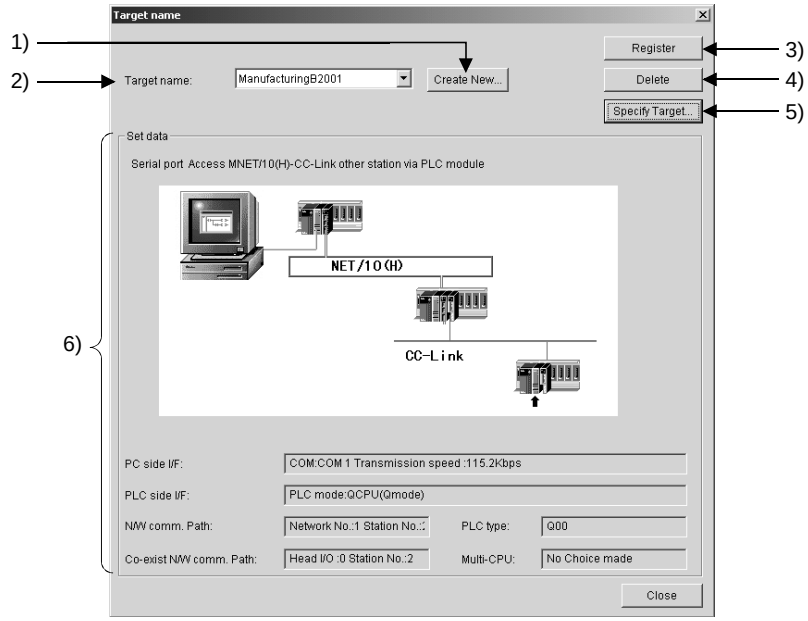
[Purpose]

Control the target PLC CPU and the connection route by name.
This enables them to be easily specified as target name for each function.

[Operation Procedure]

[Object] → [Connection target name]

[Setting Screen]



[Setting Item]

1) Create new button

Click the button to display the dialog box for "Create new target name" dialog box.
Name the PLC CPU to be connected and the connection route.

[Setting Item]

a) Target name

For the applicable character type and max. number of characters for text input, refer to section 5.3.
Up to 1024 target names can be registered.

2) Target name

The target name is displayed.

3) Resister button

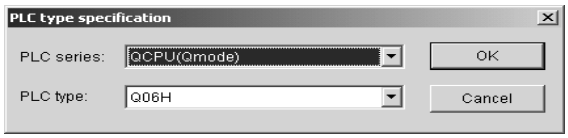
Click the button to register the settings made using Specify Target button 5).

4) Delete button

Click the button to delete the target name displayed in the target name field 2).

5) Specify Target button

Click the button to display "PLC type specification" dialog box, and specify the PLC series and PLC type of the target PLC CPU.



After that, click OK to display "Target name specification" dialog box, and set a target name.
For details, refer to Section 8.2.1 and later.

6) Set data

The set data 5) will be displayed.

[Operation Procedure]

When adding a new target name

1. Click Create new button in "Connection target" dialog box, enter a new target name in "Create new target name" dialog box and click OK.
2. Click Specify Target button, enter a PLC series and PLC type in "PLC type specification" dialog box and click OK.

   As "Target name" dialog box appears, set each item and click OK to display "Target name specification" dialog box.
3. Click Resister in "Target name" dialog box to complete the addition of new target name.

When changing the target name settings

1. Select the target name of which settings to be changed in the target name field in "Target name" dialog box.
2. Click Specify Target to display "PLC type specification" dialog box that shows registered PLC types.
   When changing the PLC series and PLC type, select form the combo box.
3. Clicking OK in "PLC type specification" dialog box displays the registered settings in "Connection Setup" dialog box. Change the corresponding setting and click OK.
4. Click Resister in "Target name" dialog box to complete the setting change.

When deleting a target name

1. Select the target name to be deleted in the target name field in "Target name" dialog box.
2. Clicking Delete displays the confirmation dialog box. Click Yes to complete the target name delete.

POINT

- Only target names which have been set to be usable in "Security setting" are displayed.
  For details of "Security setting", refer to Section 11.1.3.
- For access range that can be specified as target name, refer to Appendix.1.

8.2.1 Accessing the host station

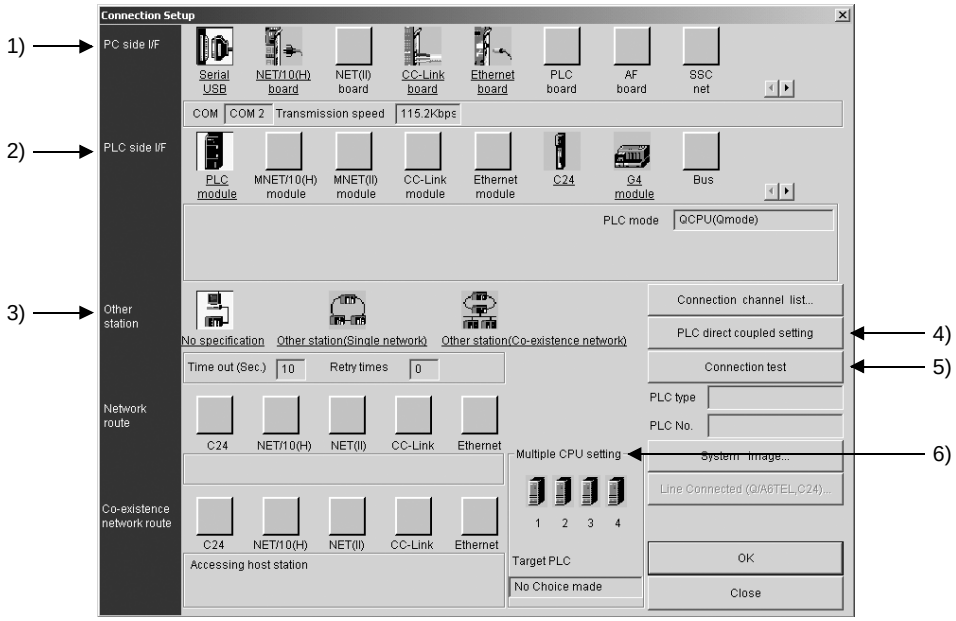
[Purpose]

Specify when making access to the host station.

[Operation Procedure]

[Object] → [Connection target name] → Click Specify Target in "Target name" dialog box. → Specify a PLC series and PLC type in "PLC type specification" dialog box.

[Setting Screen]



POINT

- The icon with underlined name leads to the detail setting dialog box: double-clicking it displays a dialog box for detail setting.

[Setting Item]

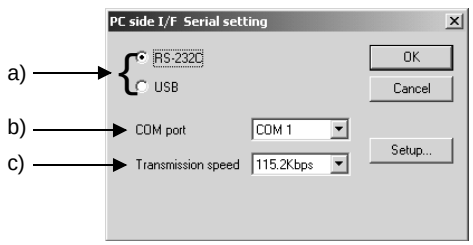
1) PC side I/F

Select an interface of PC.

For communication precautions, refer to POINT (4) to (6) in Section 8.2.

The following shows the detail setting dialog box.

QCPU



[Setting Item]

a) RS-232C/USB

Select a connection method. "USB" is selectable for Q mode only.

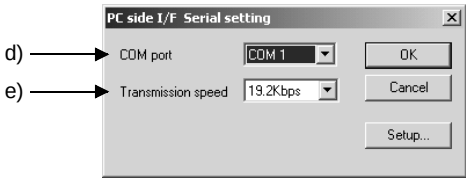
b) COM port

When selecting "RS-232C", specify a COM port for connecting an RS-232C cable.

c) Transmission speed

Specify the transmission speed when "RS-232C" is selected.
For high speed communication at 57.6/115.2kbps, use a PC that supports 57.6/115.2kbps transmission speed.

QnA/A/FXCPU



[Setting Item]

d) COM port

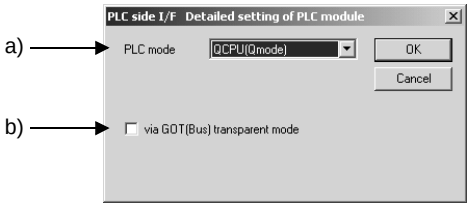
Specify a COM port for connecting an RS-232C cable.

e) Transmission speed

Specify the transmission speed.
The selectable transmission speed depends on the PLC series and PLC type.
For QnACPU, the PLC CPU module of function version B or later can communicate at 38.4kbps.
Check the function version by referring to Appendix 3.

2) PLC side I/F

Select a module for connecting PLC to PC.
The following shows the detail setting dialog box.



[Setting Item]

a) PLC mode

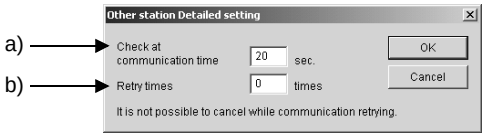
Select the PLC series of PLC CPU to be connected to GX Explorer.

b) Via GOT(Bus) transparent mode

Check the check box to use the GOT transparent function.
For details of the GOT transparent function, refer to "GOT-A900 Series User's Manual (GT Works2 Version1/GT Designer2 Version1 compatible Connection System Manual)".

3) Other station

When specifying the host station, select "No specification".
Double-clicking the icon name displays the following detail setting dialog box.



[Setting Item]

a) Communications time check

Specify the time length of communication check (1 to 9999 seconds).

b) Retry times

Specify the number of times for communication retry (0 to 5 times).
If the PLC CPU is powered off or hardware reset is performed during ladder monitor, it will take long time until a communication error appears.
Until the error appears, during execution is displayed in Monitor status.
The longest time until the error appears can be found by the following expression.
(Time specified for communications time check) × 3 × (Count specified for the number of retries + 1)
For example, when the communications time check is specified as 20 seconds and the number of retries as 1 times, the resultant time is (20 seconds) × 3 × (1 + 1) = 120 seconds, and the error appears after a maximum of 120 seconds have elapsed.

4) PLC direct coupled setting button

Click the button to change to the host station.

5) Communication test button

Click the button to test if the PC can normally access the set PLC CPU.
When the test results in normal access, the target PLC CPU model is displayed in the PLC model field.

6) Multi-PLC

Set this item when connecting to a multiple CPU system.
For details, refer to Section 8.2.3 (1).

8.2.2 Accessing the other station

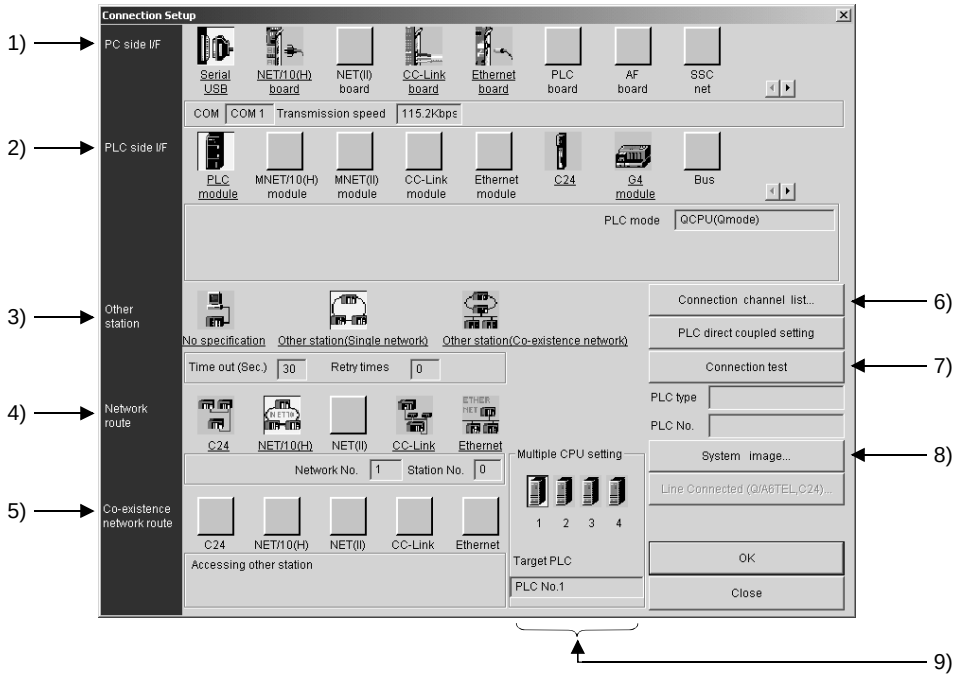
[Purpose]

Specify when making access to the other station.

[Operation Procedure]

[Object] → [Connection target name] → Click Specify Target in "Target name" dialog box. → Specify a PLC series and PLC type in "PLC type specification" dialog box.

[Setting Screen]



POINT
• The icon with underlined name leads to the detail setting dialog box: double-clicking it displays a dialog box for detail setting.

[Setting Item]

1) PC side I/F

Select an interface of PC.

For details, refer to Section 8.2.1.1).

2) PLC side I/F

Select a module for connecting PLC to PC.

For details, refer to Section 8.2.1.2).

3) Other station

Specify a network type for connecting to other station.
For details of detail setting dialog box, refer to Section 8.2.1.3).

Single network

It indicates a system which is configured by a single network and a multilevel system, e.g., only MELSECNET/10 or only Ethernet. (Since Ethernet is regarded as the MELSECNET/10, specify Single network for an MELSECNET/10 and Ethernet mixed system.)

Coexistence network

Set this network when making access to the other station PLC via two different networks.
This network indicates a system which is made up of different networks, e.g. from MELSECNET/10 to CC-Link unit or from Q-compatible C24/QC24 to MELSECNET/10.
This network cannot be chosen for the A series.

4) N/W comm. Path

When single network is selected

Specify the network type to be accessed, and set the first I/O No., network No. and station No. in the detail setting dialog box.
The setting items depend on the set network type.

When Coexistence network is selected

Choose this when making access to the network different from the one where the personal computer is connected.

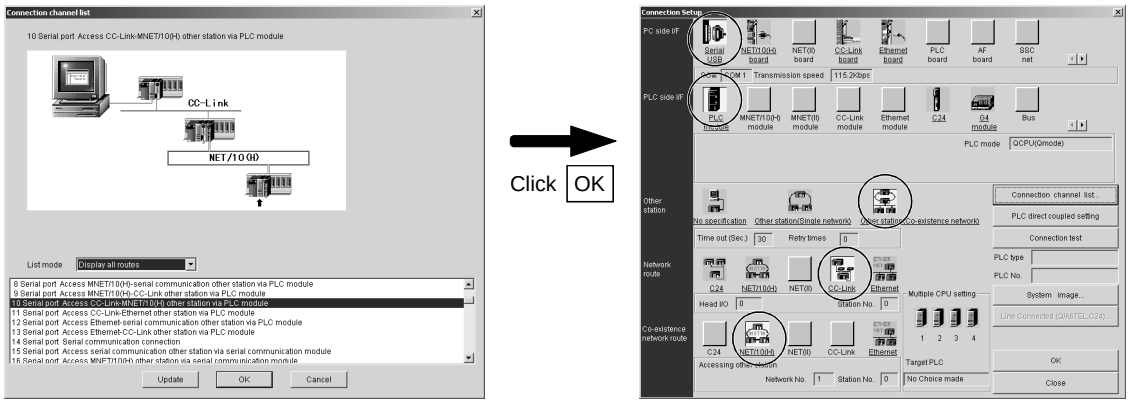
5) Co-exist N/W comm. Path

Select the network type, network No., station No. and head I/O No. to be accessed.
Set the start I/O No., network No. and station No. in the detail setting dialog box.
The setting items depend on the set network type.

6) Connection channel list

You can set the connection target while looking at the Connection channel list.

As clicking OK automatically sets the connection channel on the Connection Setup screen, settings can be made easily if a complicated system is configured. Set the network number, station number and others as desired according to the access target.


Connection channel list
10 Serial port Access CC-Link-MNET/10(H) other station via PLC module
CC-Link
NET/10(H)
List mode
Display all routes
8 Serial port Access MNET/10(H)-serial communication other station via PLC module
9 Serial port Access MNET/10(H)-CC-Link other station via PLC module
10 Serial port Access CC-Link-MNET/10(H) other station via PLC module
11 Serial port Access CC-Link-Ethernet other station via PLC module
12 Serial port Access Ethernet-serial communication other station via PLC module
13 Serial port Access Ethernet-CC-Link other station via PLC module
14 Serial port Serial communication connection
15 Serial port Access serial communication other station via serial communication module
Update
OK
Cancel
Click OK
Connection Setup
PC side I/F
PLC side I/F
Other station
Network route
Co-existence network route
Connection channel list...
PLC direct coupled setting
Connection test
System image...
OK
Close

Clicking the OK button automatically sets the connection channel (areas enclosed by circles) on the Connection Setup screen.

Changing from one display to another

Convenient usage of Display selected routes

When Display selected routes are selected by specifying the PC side I/F and PLC side I/F on the Connection Setup screen, only the routes in the accessible range are displayed from among the other station, network route and coexistence network route.

7) Connection test button

Tests whether proper access can be made to the PLC set as the access target on the Connection Setup screen.
If proper access can be made, the model name of the PLC as the access target appears in the CPU type field.

8) System image button

Illustrates the preset connection channel.

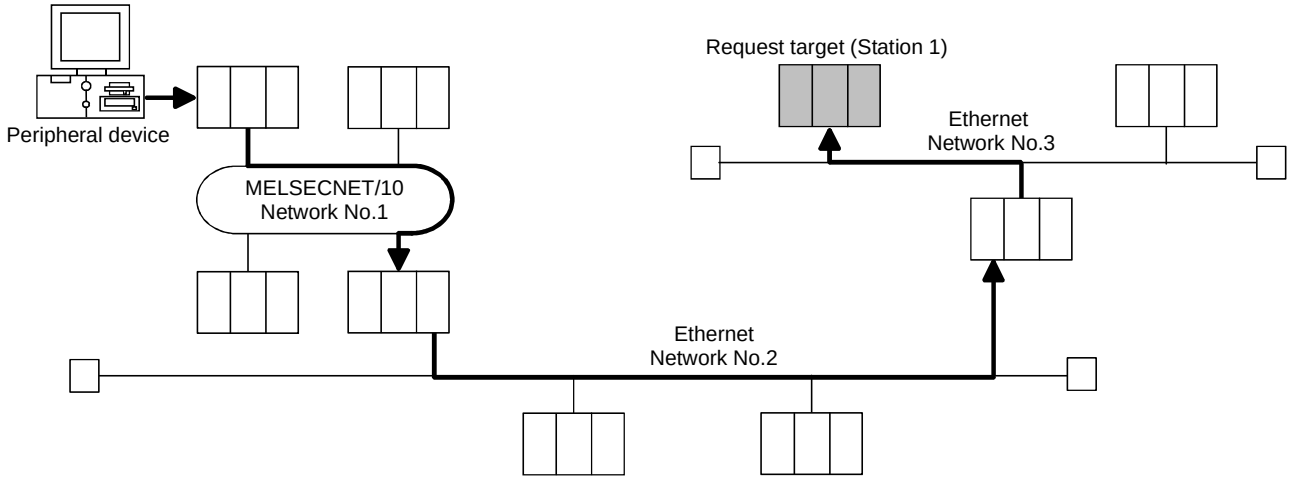
9) Multi-PLC

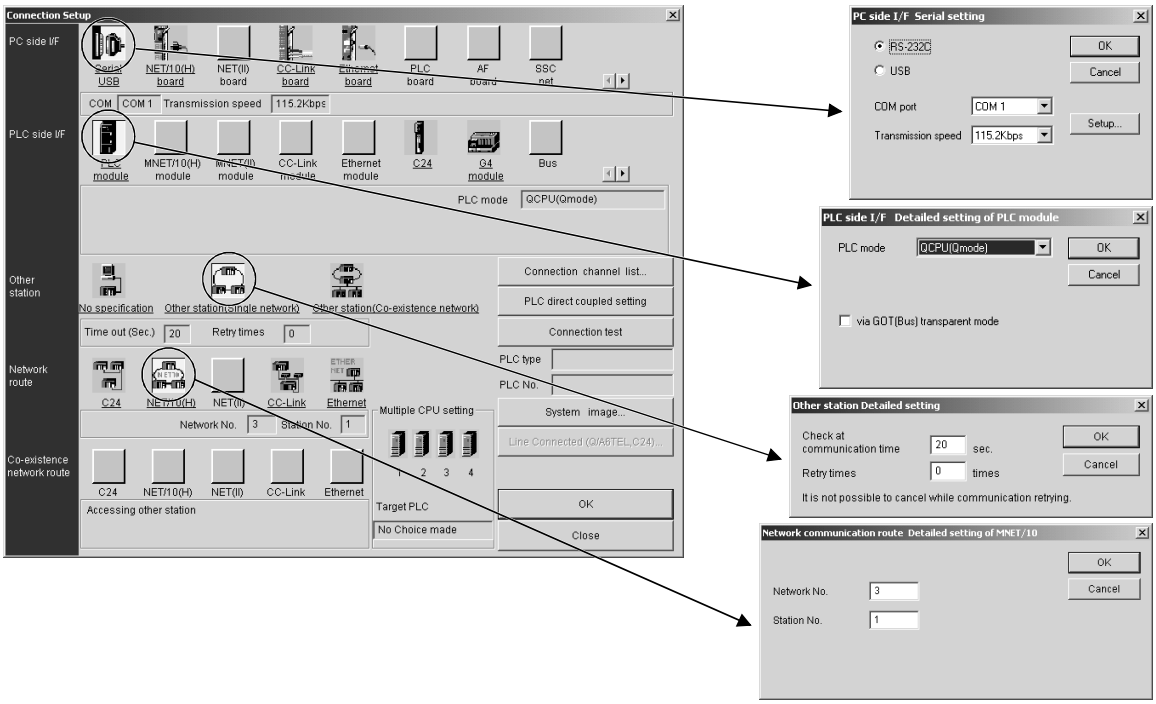
Set this item when connecting to a multiple CPU system.
For details, refer to Section 8.2.3 (2).

Screen setting for MELSECNET/10 and Ethernet combined system (Single network)

In an MELSECNET/10 and Ethernet mixed system configuration, specify Single network to access the other station. (Since Ethernet is equivalent to the MELSECNET/10)

An example of the Connection Setup setting screen is provided for the following system configuration (Q/QnA only).





For access to the other station or multilevel system, not only the Connection Setup but also the routing parameters should be set to enable communications. Use GX Developer to make the routing parameter settings.

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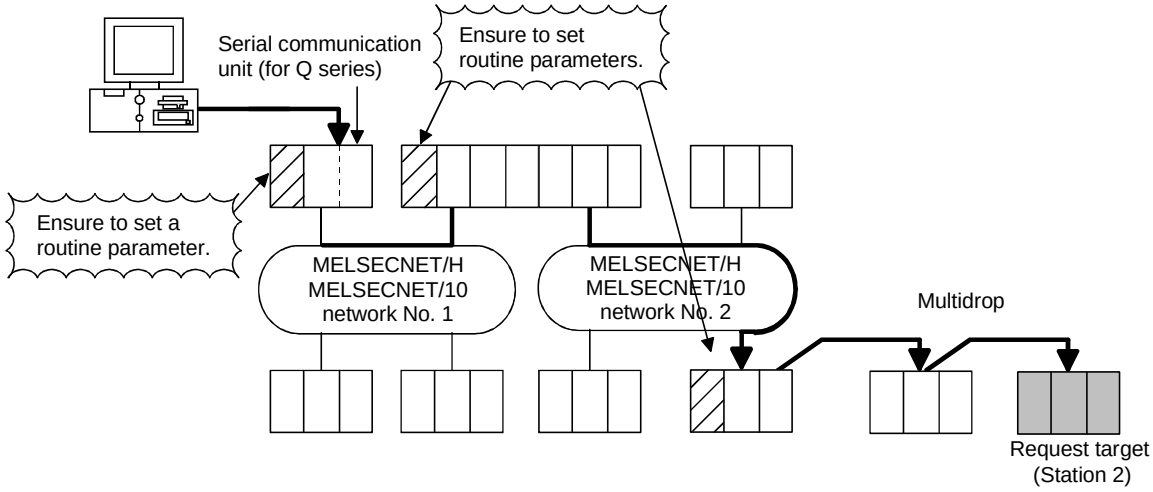
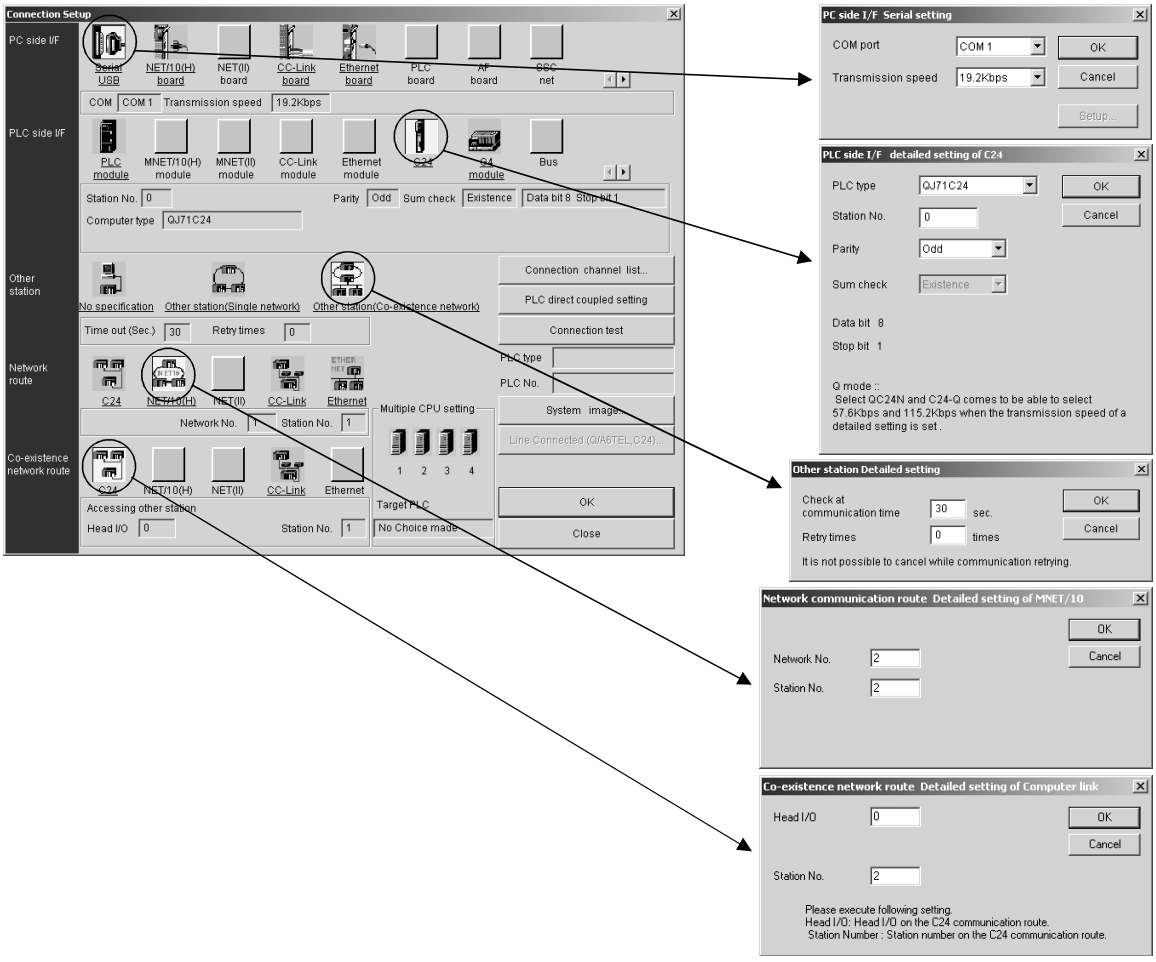
Screen setting for MELSECNET/H, MELSECNET/10 and C24 mixed system (Coexistence network)

Specify Coexistence network when accessing the other station via different networks, e.g. from MELSECNET/H, MELSECNET/10 to Q-compatible C24/QC24.

An example of the Connection Setup setting screen is provided for the following system configuration (Q/QnA only).


Serial communication unit (for Q series)
Ensure to set routine parameters.
Ensure to set a routine parameter.
MELSECNET/H MELSECNET/10 network No. 1
MELSECNET/H MELSECNET/10 network No. 2
Multidrop
Request target (Station 2)


Connection Setup
PC side I/F
PLC side I/F
Other station
Network route
Co-existence network route
Connection channel list...
PLC direct coupled setting
Connection test
System image...
OK
Close
PC side I/F Serial setting
COM port
Transmission speed
Cancel
Setup...
PLC side I/F detailed setting of C24
PLC type
Station No.
Parity
Sum check
Data bit 8
Stop bit 1
Q mode :: Select QC24N and C24-Q comes to be able to select 57.6Kbps and 115.2Kbps when the transmission speed of a detailed setting is set.
Other station Detailed setting
Check at communication time
Retry times
It is not possible to cancel while communication retrying.
Network communication route Detailed setting of MNET/10
Network No.
Station No.
Co-existence network route Detailed setting of Computer link
Head I/O
Please execute following setting.
Head I/O: Head I/O on the C24 communication route.
Station Number : Station number on the C24 communication route.

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8.2.3 Accessing multiple CPU

8.2.3 (1) Access to other CPU in multiple CPU system

[Purpose]

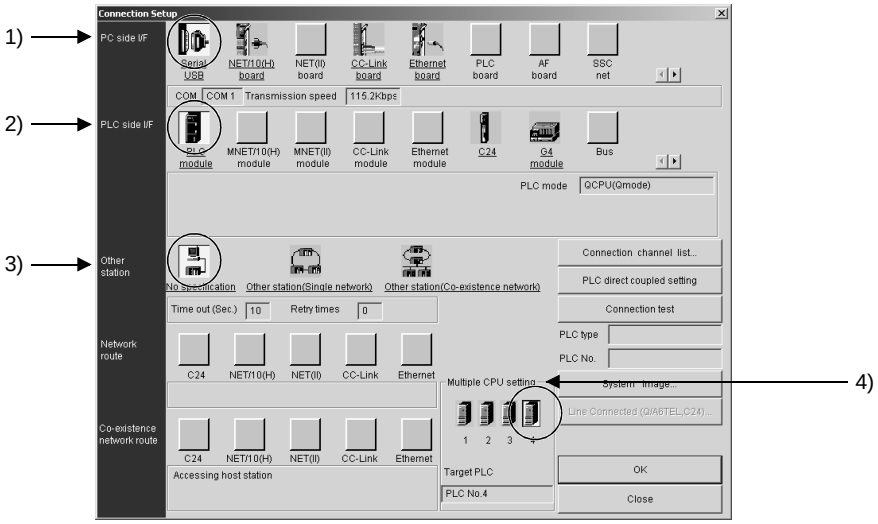
Specify when accessing multiple CPU system.
Only QCPU (Q mode) is supported. (Except Q00JCPU).

[Operation Procedure]

[Object] → [Connection target name] → Click Specify Target in "Target name" dialog box. → Specify a PLC series and PLC type in "PLC type specification" dialog box.

[Setting Screen]

The following setting example assumes that the personal computer is connected to the PLC No. 1 by a cable to access the PLC No. 4.



[Setting Item]

1) PC side I/F

Select an interface of PC.
For details, refer to Section 8.2.1.1).

2) PLC side I/F

Select a module for connecting PLC to PC.
For details, refer to Section 8.2.1.2).

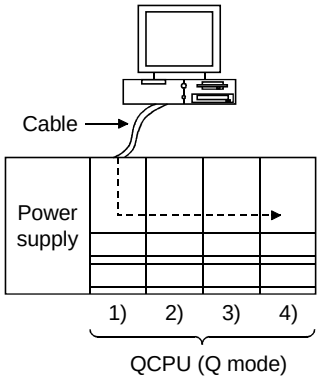
3) Other station

Specify a network type.
For details of detail setting dialog box, refer to Section 8.2.1.3).

4) Multiple CPU setting

Specify the multiple CPU to be connected. The specified icon turns yellow.
When accessing to other than the connected PLC CPU, make sure to specify the CPU No. to be connected.
When the icon corresponding to either of PLC No.1 to 4 is not specified in the multiple CPU setting, the target PLC field displays "Not specified".
When the icons of the PLC No. 1 to PLC No. 4 modules have been selected, clicking the selected icon sets it to "No PLC No. specified".
When "No PLC No. specified" has been set, access is made to the PLC CPU connected by the RS232/USB cable.

An example on the above setting screen is shown by the following image sketch.



1) :PLC No.1
2) :PLC No.2
3) :PLC No.3
4) :PLC No.4

POINT

- The Q motion CPU is incompatible with GX Explorer.
  Accordingly, do not connect GX Explorer to the Q motion CPU.
  Accidental connection will cause a communication error. In that case, reconnect it to the PLC CPU.
- In the multiple CPU system, access can be made to only the "No. 1 CPU" when access is to be made to the other PLC CPU from the PC CPU module via the Q bus.
- The CPU No. can be specified as follows:
  Basic model QCPU: CPU No. 1 to 3
  High Performance model QCPU, Process CPU: CPU No. 1 to 4

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8.2.3 (2) Network access via multiple CPUs

[Purpose]

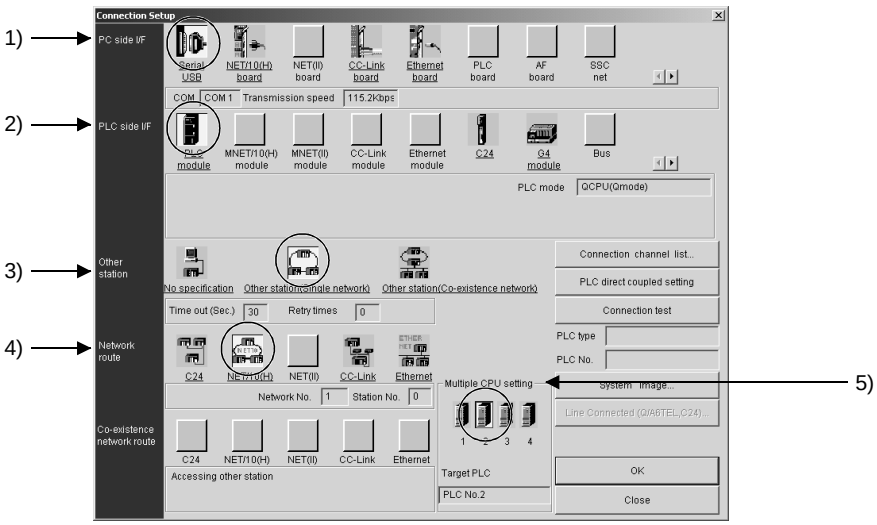
Access is made to network station under control of the host module.

[Operation Procedure]

[Object] → [Connection target name] → Click Specify Target in "Target name" dialog box. → Specify a PLC series and PLC type in "PLC type specification" dialog box.

[Setting Screen]

Make the settings to access a CPU (any of CPU No.1 to 4) within the multiple CPU system.



[Setting Item]

1) PC side I/F

Select an interface of PC.
For details, refer to Section 8.2.1.1).

2) PLC side I/F

Select a module for connecting PLC to PC.
For details, refer to Section 8.2.1.2).

3) Other station

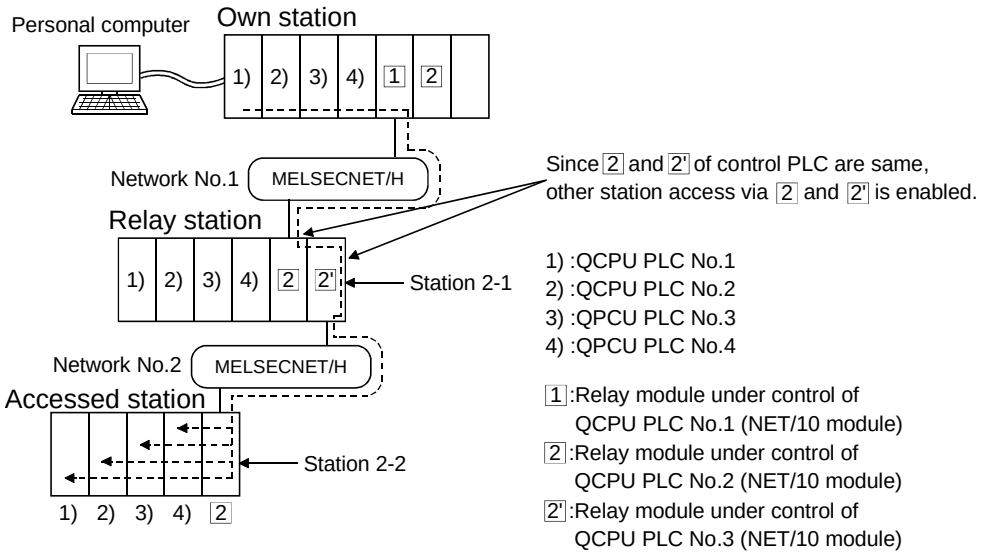
Specify a network type.
For details of detail setting dialog box, refer to Section 8.2.1.3).

4) N/W comm. Path

Specify the network type to other station.
For details, refer to Section 8.2.1.3).

5) Multiple CPU setting

Specify the multiple CPU to be connected.
The connection path for system configuration is explained in the next page.
When access is made to non-control PLC as module used for routing of the accessed other station in a Multiple CPU system, the relay modules and QCPUs of the host station, all relay stations and accessed station should be the modules of function version B.
For module version check, refer to Appendix 3.

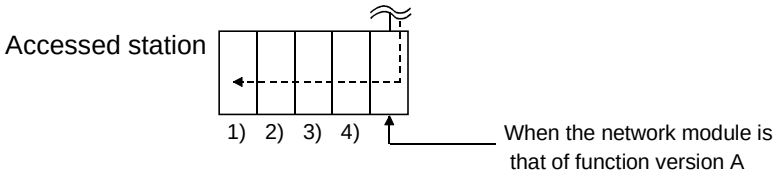

Personal computer
Own station
1) 2) 3) 4) 1 2
Network No.1
MELSECNET/H
Relay station
1) 2) 3) 4) 2 2'
Station 2-1
Network No.2
MELSECNET/H
Accessed station
Station 2-2
1) 2) 3) 4) 2
Since 2 and 2' of control PLC are same, other station access via 2 and 2' is enabled.
1) :QCPU PLC No.1
2) :QCPU PLC No.2
3) :QPCU PLC No.3
4) :QPCU PLC No.4
1 :Relay module under control of QCPU PLC No.1 (NET/10 module)
2 :Relay module under control of QCPU PLC No.2 (NET/10 module)
2' :Relay module under control of QCPU PLC No.3 (NET/10 module)

Precautions for and restrictions on access to other station

(1) When accessing the CPU controlled or not controlled by the accessed station, change the accessed module in "Multiple CPU setting" on the Connection setup screen.

(2) Assign the two network modules on the relay station to the same control CPU.

(3) When the network module of the accessed station is that of function version B, access can be made to PLC No. 1 to PLC No. 4 modules.
When the the network module of the accessed station is that of function version A, access may be made to only the control PLC by the network module (PLC No. 1).



POINT
Setting the routing parameters of the MELSECNET/H, MELSECNET/10 (including Ethernet) allows access to the other station PLC within the range of the network system specifications.

POINT

(1) Precautions for access to the other stations of the MELSECNET (II, /10) via the computer link unit (for A series) or E71

GX Explorer recognizes the MELSECNET/10 as the MELSECNET (II) when the other stations are to be accessed via the computer link unit (for A series) or E71. When the same station exists on the MELSECNET (II) and MELSECNET/10, the other stations beyond the MELSECNET/10 may not be accessed if Via MELSECNET/10 has been selected in Connection Setup. (Because communications from the station of the unit set in the "Unit valid for other station access" network parameter are executed.)
When you want to access all other stations via the computer link unit (for A series) or E71, do not set the same station number on the networks.

(2) When the MELSECNET/10 /CC-Link card is used, the time check is fixed to 30 seconds.

(3) Precautions for access to the motion controller (SCPU) via the MELSECNET/10, MELSECNET/II
- Set the A171SH/A172SH as the A2SH.
- Set the A273UH(S3) as the A3U.

(4) A communications error may occur if communications are made with the PLC after setting the resume function, suspend setting, power-saving function or standby mode of the personal computer.
Hence, any of the above functions should not be set for making communications with the PLC.

(5) Connecting/disconnecting the USB cable, resetting the PLC, or switching power OFF/ON frequently during communications with the PLC can cause a communications error, from which recovery may not be made.
Therefore, make sure not to connect/disconnect the USB cable, reset the PLC or power ON/OFF during communication.
If recovery cannot be made from the communications error, completely disconnect the USB cable once and reconnect it in more than five seconds.
Communication indicates the online operations (functions included in [Confirm], [Operation] and [Diagnostics] menu).

(6) Communication errors may occur depending on the type of personal computer used or USB cable assembly In this case.
Please execute communication again according to the error message contents.

(7) When fast communication is made after the transmission speed has been changed on the personal computer's serial port (personal computer side interface), communications may not be made or communications retries may take place to delay communications, depending on the performance of the personal computer.
If communications cannot be made in fast communication, reduce the transmission speed and make communication.

(8) Other station access cannot be made for the 171SHCPU and A172SHCPU of the motion controller (SCPU).
Access may be made to only the host station.

8.3 Access Data Name

[Purpose]

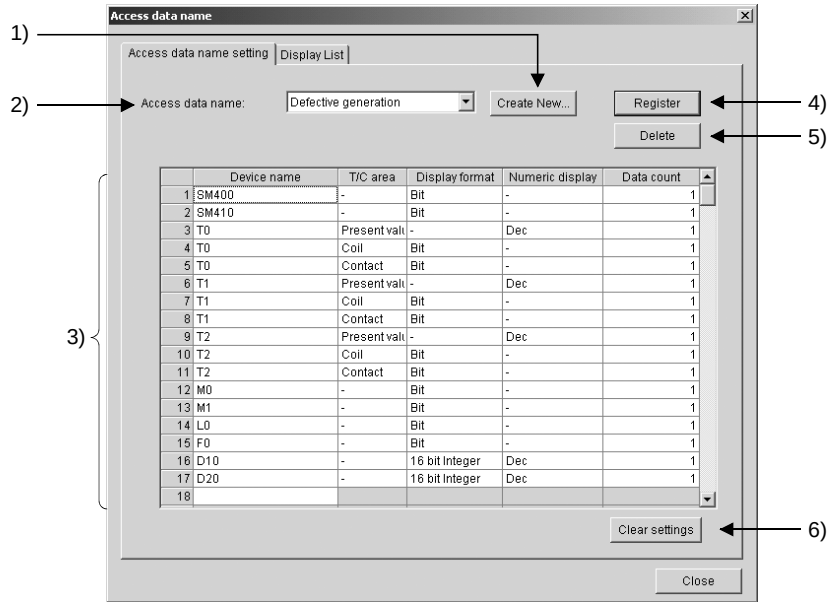
Control the target PLC CPU and the connection route by name.
With this setting, the access target can be easily specified without the necessity to specify device name for each function (device monitor, device test, error diagnostics, etc) .

[Operation Procedure]

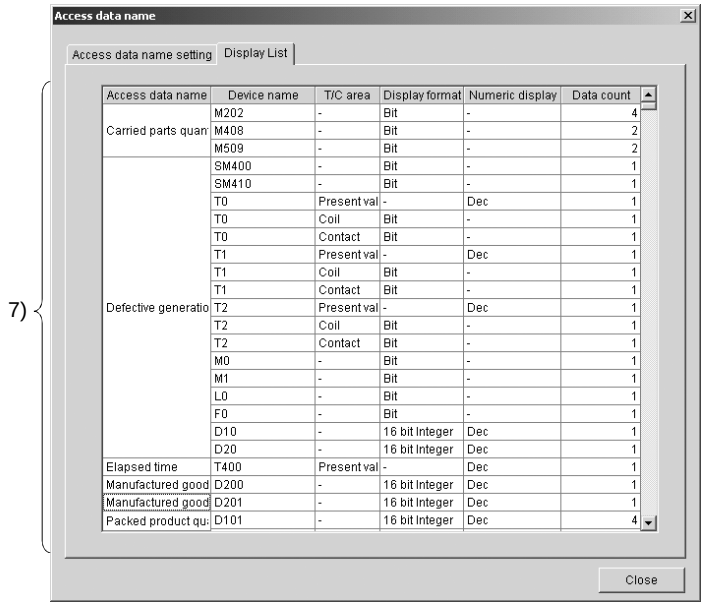
[Object] → [Access data name]

[Setting Screen]

<<Access data name setting>>



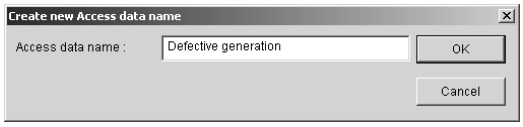
<<Display List>>



[Setting Item]

1) Create new button

Click the button when creating a new access data name.
Click the button to display "Create new Access data name" dialog box, and enter an access data name.
For the applicable character type and max. number of characters for text input, refer to section 5.3.
Up to 1024 access data names can be registered.



2) Access data name

The access data name is displayed.

3) Device list

The devices registered under the access name 2) are displayed.
When entering a device, click the bottom line (blank) of the device name field.
Entering a device name enables other fields to be entered.
Selecting a line No. and clicking Insert inserts a blank line above the selected line.

Device name:	Enter a device. Also, qualifications (digit specification, bit specification, indirect specification, indexing) can be entered.
T/C area:	In the case of device T/C, either of "Contact", "Coil" or "Present value" is selectable.
Display format:	Select a format for displaying data on the screen by device monitor or timing chart function.
Numeric display:	Select an option from the combo box of numeric display field when other than "Bit" and "ASCII character string" has been set in the display format field.
Data count:	Enter the number of data points starting from the entered device name. Data count indicates the number of data formats selected from Display format section to be used.

The following explains the relation between applicable number of devices and settings. In the explanation, "5" is set to "Data count".

(Example)

1. Without device qualification (Word)
   When "D0" is set to Device name, "16 bit Integer" or "ASCII character string" is set to Display format, D0, D1, D2, D3, D4 data can be used.
2. Without device qualification (Double word)
   When "D0" is set to Device name, "32 bit Integer" or "Real number" is set to Display format, D0, D2, D4, D6, D8 data can be used.

3. With device qualification (Digit specification K1 to K4)
   When "K3MO" is set to Device name, "16 bit Integer" is set to Display format, K3M0, K3M12, K3M24, K3M36, K3M48 data can be used.
4. With device qualification (Digit specification K5 to K8)
   When "K5M0" is set to Device name, "32 bit Integer" is set to Display format, K5M0, K5M20, K5M40, K5M60, K5M80 data can be used.
5. Indexing
   When "D0Z2" is set to Device name, "16 bit Integer" is set to Display format, D0Z2, D1Z2, D2Z2, D3Z2, D4Z2 data can be used. (When number of data ≧ 2 is set by indexing, the device No. of qualification No. will be counted instead of index No.)
6. With device qualification (Indirect qualification)
   Only "1" can be specified for number of data.

4) [Resister] button

Click the button to register the settings made for the access data name displayed in the access data name field.

5) [Delete] button

Click the button to delete the displayed access data name and the settings.

6) [Clear settings] button

Click the button to clear all device data of the displayed access data name.

7) Display List

Selecting <<Display List>> displays the registered access data names in list format. The device data cannot be edited in the list.

POINT

- Only the access data names that have been set to usable in "Security setting" dialog box can be displayed in "Access data name" dialog box.

[Operation Procedure]

When editing the settings of the existing access data name.

1. Select the access data name of which settings are to be edited at the access data name field in "Access data name" dialog box.
2. As the devices registered in the access data name appear, edit the corresponding data and click [Resister] to register the changed settings.

8.4 MELSOFT Connection

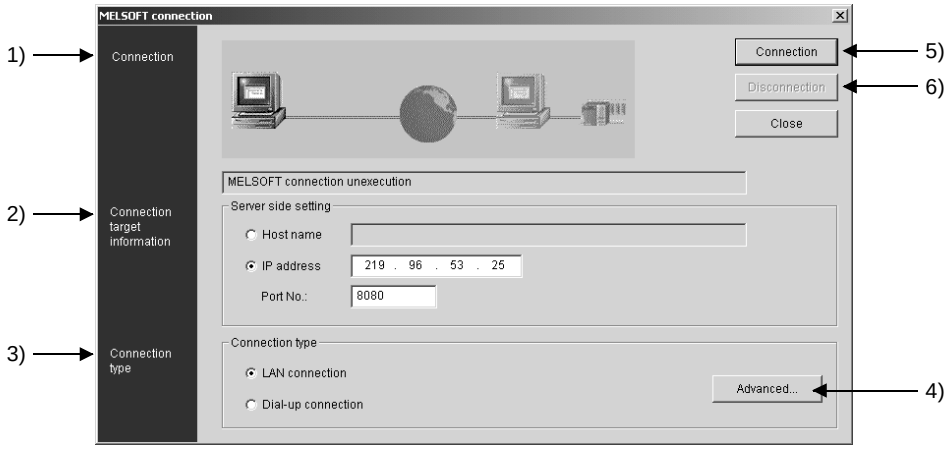
[Purpose]

MELSOFT connection (Internet/Intranet connection) is for maintaining the system in a remote location.
Make the settings, connection and disconnection for MELSOFT connection.

[Operation Procedure]

[Object] → [Connect to MELSOFT]

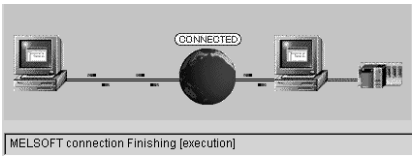
[Setting Screen]



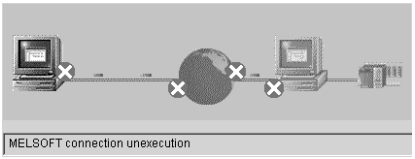
[Setting Item]

1) Connection

Connection status is displayed.
The target device that is being connected flickers. The following shows the status when the connection is completed.



If an error occurs during connection, the relevant positions are shown with .
(Devices are displayed in gray)
As a message appears to show the cause of error, confirm the corresponding position.
The following shows an example when an error has occurred.



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2) Connection target information

Specify the connection target server by host name/IP address or port No.

Host name: For the applicable character type and max. number of characters for text input, refer to section 5.3.

Port No.: Set the number in the range of 1024 to 65535.

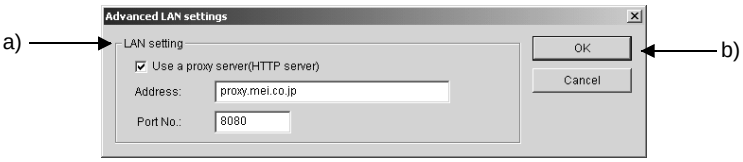
3) Connection type

Specify "LAN connection" or "Dial-up connection".

4) Advanced button

Click the button to display the advanced network setting dialog box.
The dialog box varies with the network type set in item 3).

Advanced LAN settings



[Setting Item]

a) LAN setting

Make the settings to use the proxy server within LAN on the client side. If the client is inside the proxy server, make the proxy server settings to enable the internet connection.

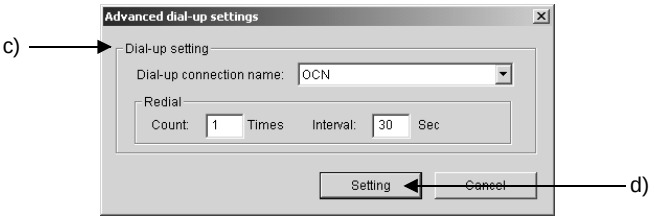
Address: Enter the proxy server address or IP address. When the HTTP server is used, set the IP address of the HTTP server.

Port No.: Enter the port No. of the proxy server in the range of 1024 to 65535.

b) OK button

Click the button to return to the Internet connection setting dialog box.

Advanced dial-up setting



[Setting Item]

c) Dial-up connection settings

Dial-up connection name:

Select the same dial-up connection name as set in Windows® . Cannot be directly entered.

Redial Count: Set the value in the range of 0 to 99 times.

Interval: Set the value in the range of 0 to 999 seconds.

d) Setting button

Click the button to complete the settings and return to the Internet connection setting dialog box.

5) Connection button

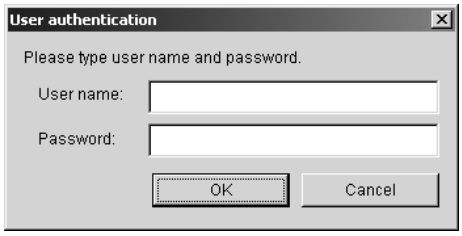
Click the button to start the MELSOFT connection.

6) Disconnection button

Click the button to disconnect the MELSOFT connection.

POINT

- GX RemoteServie-I Version2 must be installed in the server to perform the MELSOFT connection.
- Terminate all communications (Upload from PLC, monitor or similar) before performing the MELSOFT connection.
  Do not perform the ladder monitor. (Close the ladder monitor screen.)
  Note that the MELSOFT connection cannot be done when all communications are not terminated or when the ladder monitor screen is open.
- In some networks, it may take long time to complete/disconnect the MELSOFT connection.
  If the server side power is OFF when the MELSOFT connection is made/disconnected, it may take long time until an error is detected.
- The settings made in "MELSOFT connection" dialog box are applied to all target names. Therefore, when line connection is made in "MELSOFT connection" dialog box, all the communications after that setting are performed via Internet or Intranet.
  However, PLC CPU cannot be accessed using any of the following functions during the MELSOFT connection.
  1. Access to PLC CPU from the application (GX Developer, GX Configurator or other) that was started on GX Explorer.
  2. Access to PLC CPU from GX Configurator that was started by clicking Diagnostics of the system monitor.
  3. Ping test for the PLC CPU station by Ethernet diagnostics.
  4. Access to MELSECNET/H remote I/O station via Web server module (However, network analysis of the MELSECNET/H remote I/O station can be executed.)
- When the security setting has been made in the server, the attestation of client is executed. As the following dialog box appears, enter the user name and password.



9 INVESTIGATION AND CONFIRMATION

This chapter explains the operations that can be executed from [Confirm] menu: PLC status monitor, device monitor, display and saving of timing chart, sampling trace, ladder monitor and local device monitor, which are for monitoring the facility operation status, and [Diagnostics] menu: error diagnostics, operation analysis, PLC diagnostics, network diagnostics, system monitor and alarm notification.

9.1 PLC Status Monitor

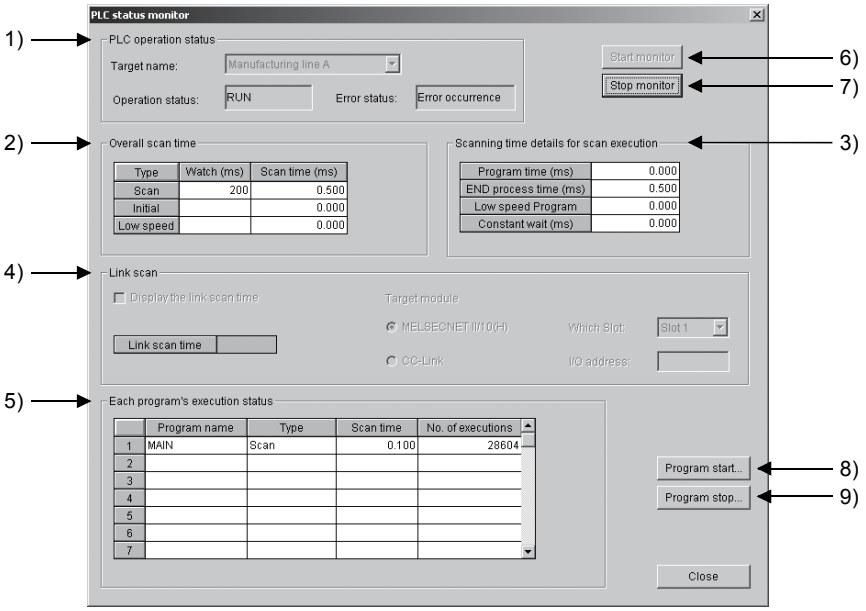
[Purpose]

Monitor the PLC CPU operation status.

[Operation Procedure]

[Confirm] → [PLC status monitor]

[Setting Screen]



[Setting Item]

1) PLC operation status

The operation status (STOP/RUN/ERROR) and error status (No error/Error occurrence) of the specified target name are displayed.

2) Overall scan time

Monitoring time (ms) for each type (Scan/Initial/Low speed) and total scan time are displayed.
For A/FXCPU, the data for Scan only are displayed.

3) Scanning time details for scan execution (Q/QnACPU)

The following 4 items are displayed:
- Program time (ms)
- END process time (ms)
- Low speed Program (ms)
- Constant wait (ms)

4) Link scan

Link scan time can be displayed by checking "Display the link scan time".
Select either "MELSECNET II/10(H)" or "CC-Link" for "Target module".
For "MELSECNET II/10(H)", set "Slot 1" to "Slot 4" at "Which Slot" section.
For "CC-Link", specify the first I/O address in Hex and by the 16-point.

5) Each program's execution status (Q/QnACPU)

Type, scan time (ms) and number of execution times are displayed for each program.

6) Start monitor button

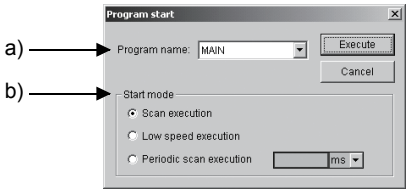
Click the button to start the PLC CPU status monitor.

7) Stop monitor button

Click the button to stop the PLC CPU status monitor.

8) Program start (Q/QnACPU) button

Click the button to display "Program start" dialog box.



[Setting Item]

a) Program name

Select the program name to be started.

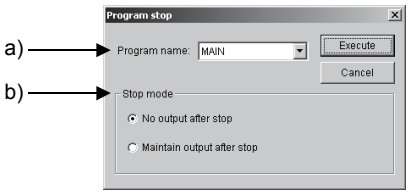
b) Start mode

Set "Scan execution", "Low speed execution" or "Periodic scan execution" to the program set in a).

When selecting "Periodic scan execution", specify the execution interval and unit (ms or s).

9) Program stop (Q/QnACPU) button

Click the button to display "Program stop" dialog box.



[Setting Item]

a) Program name

Select the program name to be stopped.

b) Stop mode

- Execution of "No output after stop" for the scan execution type turns OFF (non-execution processing) the output at the next scan. The standby status is established at and after the scan that follows. (Same operation as that of the POFF instruction.)
- Execution of " No output after stop " for the low speed execution type suspends the execution of the low speed execution type and turns OFF the output at the next scan. The standby status is established at and after the scan that follows. (Same operation as that of the POFF instruction.)
- Execution of " No output after stop " for the standby program executes 1-scan OFF as scan execution and then make a stop. Hence, the "No. of executions" is also incremented by 1.
- If an error occurs in the RET/IRET instruction during execution of 1-scan OFF in the standby program, the " No. of executions " is also incremented by 1.
  At this time, the type changes to "Scan".

9.2 Device Monitor

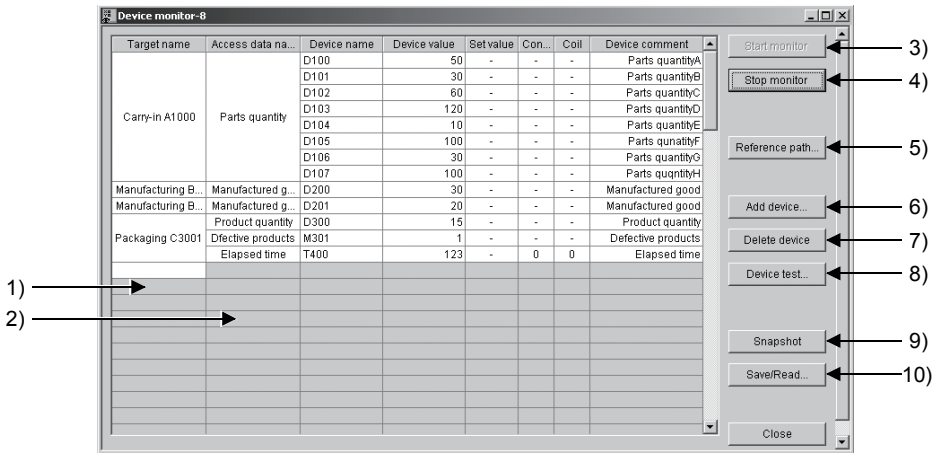
[Purpose]

Monitor multiple PLC CPUs at a time by executing the device monitor.

[Operation Procedure]

[Confirm] → [Device monitor]

[Setting Screen]



[Setting Item]

1) Target name

Select a target name.

2) Access data name

Select an access data name.

When selecting no access data name, select "Direct specification" to use the device that was directly entered in "Device monitor" screen instead of the device set by access data name.

3) Start monitor button

Click the button to start the device monitor.

The status of bit (Device value field) and contact/coil is shown as follows:

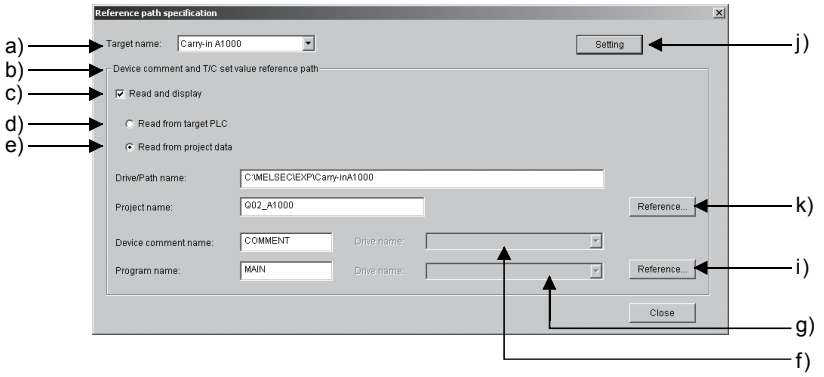
○: OFF ●: ON

4) Stop monitor button

Click the button to stop the device monitor.

5) Add device button

Click the button to display "Reference path specification" dialog box. Specify the reference path for the device comment and T/C set value that will be displayed during monitoring.



[Setting Item]

a) Target name

Select a target name.

b) Device comment and T/C set value reference path

Specify the reference path for the device comment and T/C set value that will be displayed during monitoring.

c) Read and display

When this item is not checked, all input boxes at "Device comment and T/C set value reference path" section will be masked.

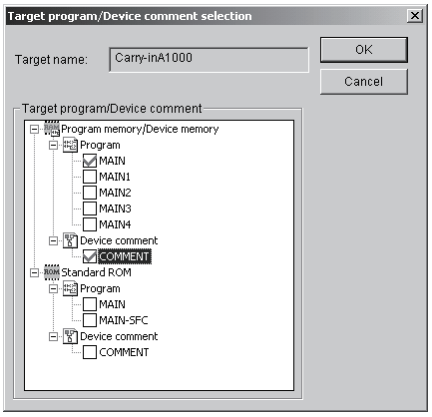
When checked, the editable items depend on whether d) "Read from target PLC" or e) "Read from project data" is selected.

d) Read from target PLC

Selecting the item masks the following items, Drive/Path name, Project name and Reference h).

<Procedure of setting program name and device comment name>

1. Set the target memory for the drive name f), g).
2. Click Reference i) to display "Target program/Device comment selection" dialog box.



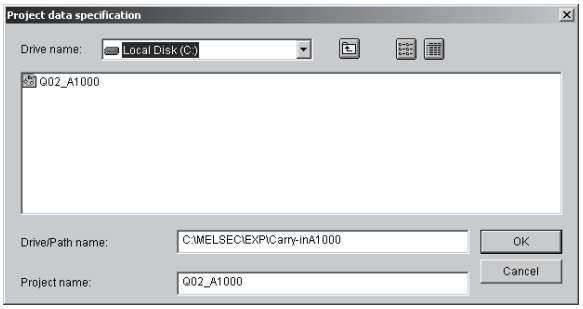
3. Check a program and a comment for device monitor.
   Only one program and one comment can be selected.
4. Click OK to close "Target program/Device comment selection" dialog box.

e) Read from project data

Selecting the item masks the drive name f), g).

<Procedure of setting drive/path name>

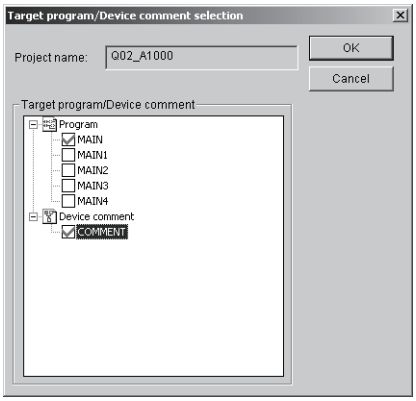
1. Click Reference h) to display "Project data specification" dialog box.



2. Select a project data name from the specified drive/path list.
3. Click OK to close "Project data specification" dialog box.

<Procedure of setting program name and device comment name>

1. Click Reference i) to display "Target program/Device comment selection" dialog box.



2. Check a program and comment for device monitor.
   Only one program and one comment can be selected.
3. Click OK to close "Target program/Device comment selection" dialog box.

Target program specification

PLC CPU	Reference	Applicable reference data name	
		Device comment	T/C set value
ACPU	Project data	File name	File name
	PLC CPU	Comment1/2, Extension comment	MAIN, SUB, MAIN-SFC
Q/QnACPU	Project data	File name	File name
	PLC CPU		
FXCPU	Project data	File name	File name
	PLC CPU	COMMENT	MAIN

* If a device comment is read from ACPU when a comment has been created for the same device for both MAIN/SUB, the MAIN comment data will have the display priority.

f) Drive name

Available when "Read from target PLC" is selected. Specify the place within the CPU from where the device comment is to be read out.

g) Drive name

Available when "Read from target PLC" is selected. Specify the place within the CPU from where the program is to be read out.

h) Reference button

Click the button to display "Project data specification" dialog box.

i) Reference button

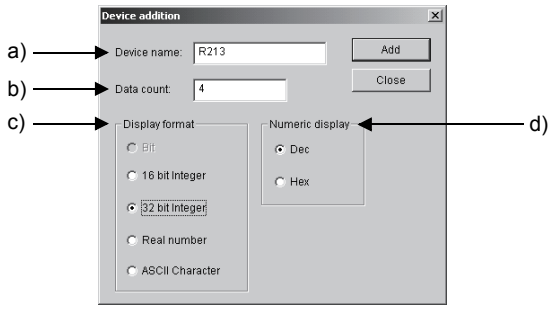
Click the button to display "Target program/Device comment selection" dialog box.

j) Setting button

Click the button to save the settings made in "Reference path specification" dialog box. When the dialog box is closed without clicking the button, the settings will be erased.

6) Add device button

Available only when "Direct specification (to make device settings)" is set for the access data name.
"Device addition" dialog box appears by selecting a cell in "Device name" field and clicking the button.
If the cell includes a device name, the data as many as set will be inserted.
If the cell includes no device name, a new device name will be added.
When an access data name (Direct specification) is selected and the button is clicked, the set device will be added to the last of the displayed devices for that access data name.



[Setting Item]

a) Device name

Enter the first device name. Only alphanumeric characters can be input.

b) Data count

Specify the number of devices starting with the first one to be displayed.
Only alphanumeric characters can be input.
For details, refer to Section 8.3.3).

c) Display format

Specify the display format (Bit/ 16 bit Integer/ 32 bit Integer/ Real number/ ASCII character).

d) Numeric display

Specify the numeric display (Dec/Hex).

7) Delete device button

Click the button to delete the record of the selected device name.
(Available only when "Direct specification" is set for the access data name, i.e., when the device that was directly entered in "Device monitor" screen is used instead of the device set by access data name.)
When an access data name or a device name including access data name setting is selected, all devices of the access data will be deleted.

8) Device test button

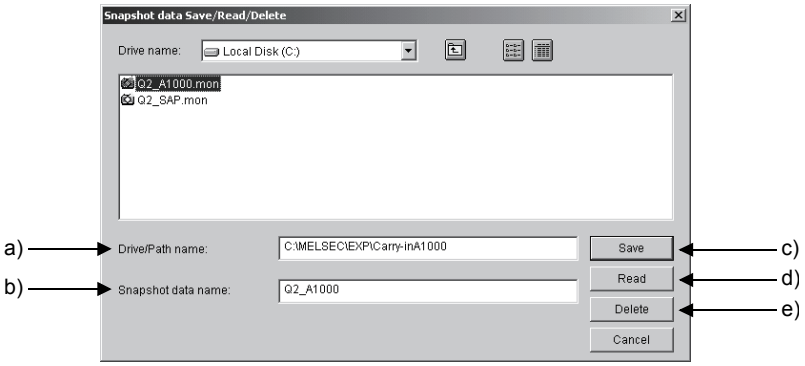
Click the button to display "Device test" dialog box.
For details, refer to Section 10.2.

9) Snapshot button

Click the button to save the latest data, i.e., the data when the button is clicked.
The snapshot data includes the settings on the device monitor screen such as the target PLC, device name, device value, etc.

10) Save/Read button

Click the button to display "Snapshot data Save/Read/Delete" dialog box.



[Setting Item]

a) Drive/Path name

Specify the drive/path name for saving/reading/deleting snapshot data.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

b) Snapshot data name

Specify a snapshot data name.
For the applicable character type and max. number of characters for text input, refer to section 5.3.
Up to 150 characters are used for both drive/path name and snapshot name.

c) Save button

Click the button to save the snapshot data in the specified drive/path.

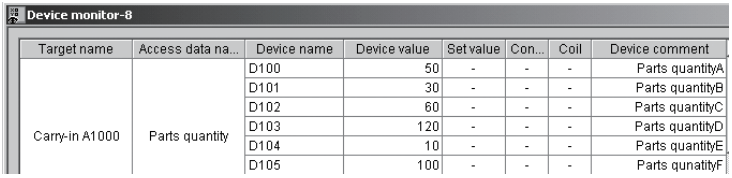
d) Read button

Click the button to read the snapshot data from the specified drive/path.
If the button is clicked during device monitoring, this will stop the device monitoring operation.

e) Delete button

Click the button to delete the snapshot data from the specified drive/path.

POINT



Carry out the following operations while selecting a device name, device value, set value, coil or device comment in "Device monitor" dialog box.

Double-click the mouse or Shift + double-click the mouse.

"Device addition" dialog box is displayed when the device name is blank;
"Device test" dialog box is displayed when the device name is defined.

Enter

"Device addition" dialog box is displayed. (Direct specification only)

Shift + Enter

"Device test" dialog box is displayed.

9.3 Timing Chart

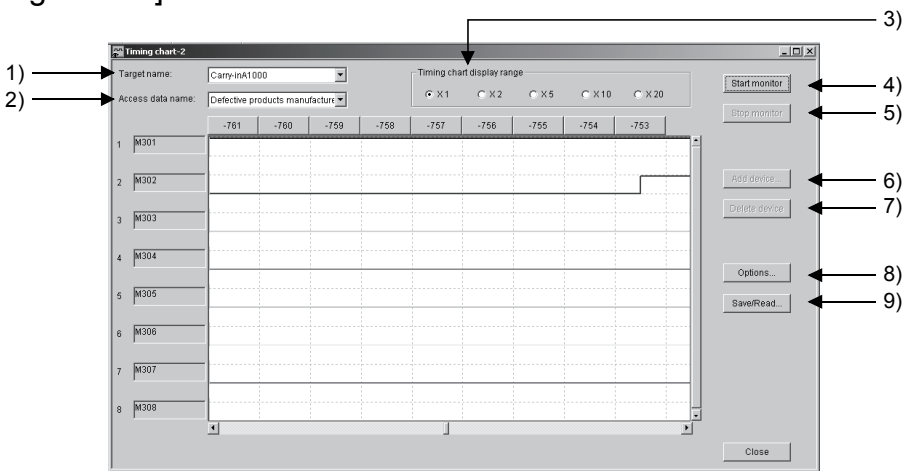
[Purpose]

Display the timing chart of the specified devices and save it to a file.
Up to 256 devices can be registered. The line color is selectable from 16 colors.

[Operation Procedure]

[Confirm] → [Timing chart]

[Setting Screen]



[Setting Item]

1) Target name

Select a target name.

2) Access data name

Select an access data name. Specifying an access data name displays the registered devices in list format.
When "Direct specification" is selected, i.e., when the device that was directly entered in "Timing chart" screen is used instead of the device set by access data name, the devices must be entred.

3) Timing chart display range

Change the ratio of timing chart display range.

4) Start monitor button

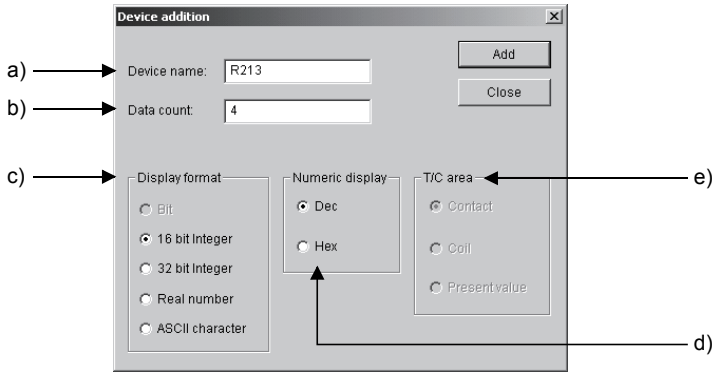
Click the button to start a monitor.

5) Stop monitor button

Click the button to stop a monitor.

6) Add device button

A device name can be selected only when "Direct specification" has been set for the access data name.
Select and click a device name to display "Device addition" dialog box. Up to 256 devices can be registered.
Device addition can be performed when a cursor is within the device input box; cannot be performed when a cursor is not within the box, and when the cell in "Access data name" field includes an access data name.



[Setting Item]

a) Device name

Enter the first device. Only alphanumeric characters can be input.

b) Data count

Specify the number of devices starting with the first one to be displayed.

Only alphanumeric characters can be input.

For details, refer to Section 8.3.3).

c) Display format

Specify the display format (Bit/ 16 bit Integer/ 32 bit Integer/ Real number/ ASCII character).

d) Numeric display

Specify the numeric display (Dec/Hex).

This setting is available for word device.

e) T/C area

Specify the T/C area (Contact/Coil/Present value).

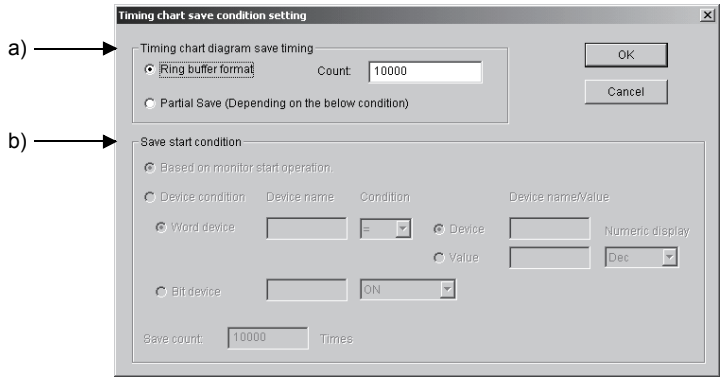
This setting is available for T/C area.

7) Delete device button

Click the button to delete the line of the selected device name. Available only when "Direct specification" is set for the access data name.

8) Options button

Click the button to display "Timing chart save condition setting" dialog box.



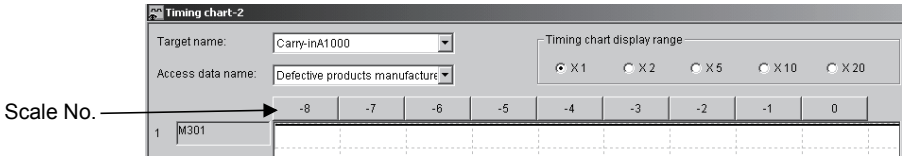
[Setting Item]

a) Timing chart diagram save timing

Set the condition for saving a timing chart diagram.

When selecting "Ring buffer format", enter the save count in the rage of 1000 to 100000 times.

1 time corresponds to 1 scale No. of timing chart.



When selecting "Partial Save (Depending on the below condition)", set the condition for saving at "Save start condition" section b).

b) "Save start condition"

Selectable from "Based on monitor start operation" or "Device condition". In either case, enter the save count in the range of 100 to 100000 times.

When selecting "Device condition", select "Word device" or "Bit device".

When "Word device" is selected

Enter a device name in a cell in "Device name" field and select a condition from the following:

"= (equal)", ">= (greater than or equal to)", "<= (less than or equal to)", "< > (not equal to)", "> (greater than)", "< (less than)".

Set the word device or value to be compared for "Device name/value".

When selecting "Value", select "Dec" or "Hex" for "Numeric display".

When "Bit device" is selected

Enter a device name in a cell in "Device name" field and select a condition from the following:

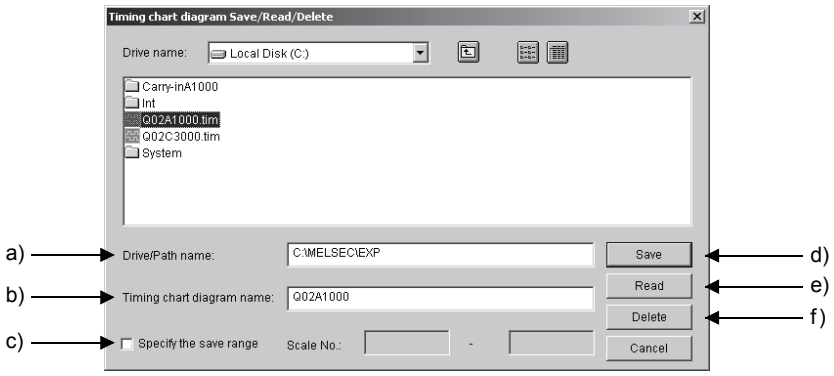
"Rising", "Falling", "ON" or "OFF".

For T/C device, only "Contact" can be set.

Only alphanumeric characters can be input.

9) Save/Read button

Click the button to display "Timing chart diagram Save/Read/Delete" dialog box.



[Setting Item]

a) Drive/Path name

Specify the drive/path name for saving a timing chart diagram.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

b) Timing chart diagram name

Specify a timing chart data name.
For the applicable character type and max. number of characters for text input, refer to section 5.3.
Up to 150 characters are used for both drive/path name and timing chart diagram name.

c) "Specify the save range"

Check the check box when specifying the data range to be saved as file from among the timing chart data monitored and temporarily saved. In this case, set the scale No. of save start/end (the number shown above the timing chart diagram).

d) [Save] button

Click the button to save the sampled data.

e) [Read] button

Click the button to read the timing chart data.

f) [Delete] button

Click the button to delete the timing chart data.

POINT

- The device display position can be changed by drag & drop operation. (A black line appears between the two device names during drag.)
- A timing chart line color can be changed by double-clicking the line.
- The timing chart diagram consisting of bit device only can be used for checking the operation analysis order and the pattern (normal or fault).

9.4 Trace

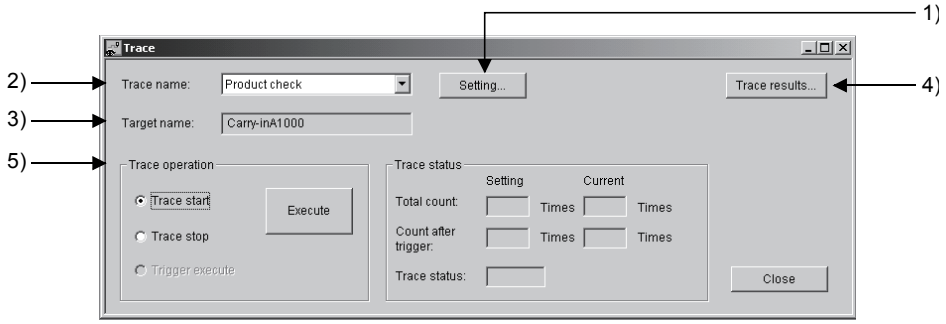
[Purpose]

Sample the specified device data (ON/OFF or present value) at certain intervals and store the data into the sampling trace area within a memory. The stored data can be read and displayed as necessary.
This function enables the change of the specified device data and ON/OFF timing of contacts or coils to be checked.
The results can be displayed in a timing chart diagram or saved to a file.

[Operation Procedure]

[Confirm] → [Trace]

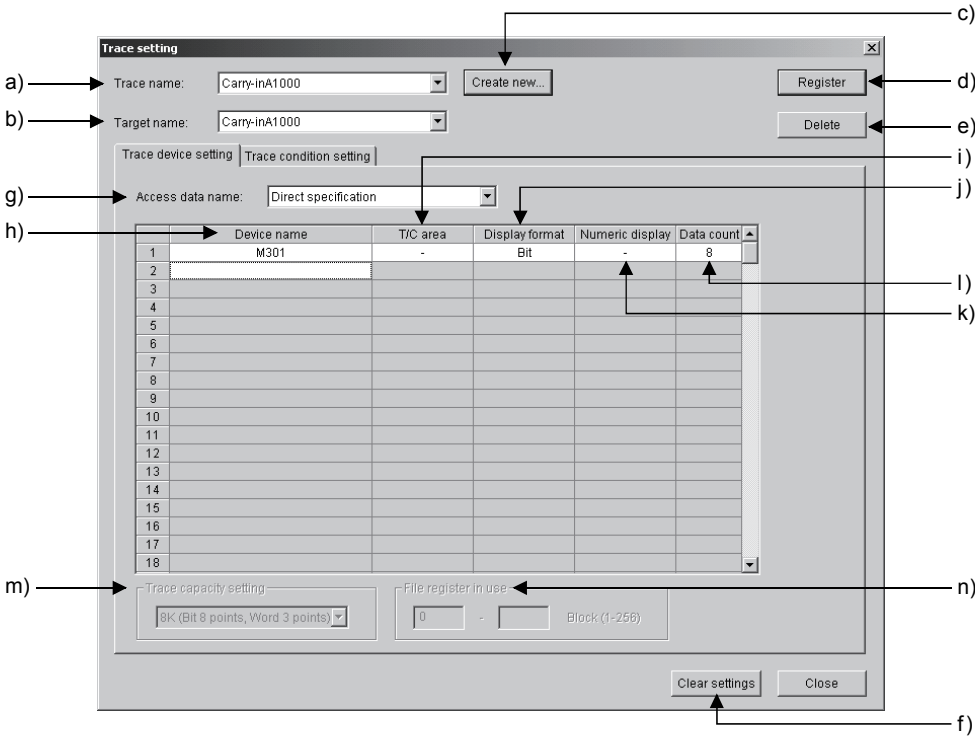
[Setting Screen]



[Setting Item]

1) Setting button

Click the button to display "Trace setting" dialog box.



[Setting Item]

a) Trace name

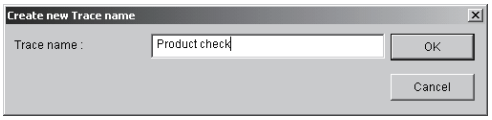
Select a trace name. (Create trace names in "Create new trace name" dialog box.)

b) Target name

Select a target name.

c) Delete button

Click the button to display "Create new trace name" dialog box.
Create a new trace name.
For the applicable character type and max. number of characters for text input, refer to section 5.3.



d) Resister button

Click the button when make the settings in <<Trace device setting>>, <<Trace condition setting>> tab.

e) Delete button

Click the button to delete a trace name.

f) Clear settings button

Click the button to return <<Trace device setting>>, <<Trace condition setting>> tab to the default settings.

<<Trace device setting>>

g) Access data name

Select from the combo box or directly enter a name in the input box.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

h) Device name

Enter the first device name to be traced.
Only alphanumeric characters can be input.

i) T/C area

Specify the T/C area (Contact/Coil/Present value).
This setting is available for T/C device.

j) Display format

When "Bit device" is selected, this item is fixed to "Bit".
When "Word device" is selected, specify the display format (Bit/ 16 bit Integer/ 32 bit Integer/ Real number/ ASCII character).

k) Numeric display

When "Bit device" is selected, "-" appears and this item cannot be set.
When "Word device" is selected, specify the numeric display (Dec/Hex).

l) Data count

Specify the number of devices starting with the first one to be traced.
Only alphanumeric characters can be input.
For details, refer to Section 8.3.3).

m) Trace capacity setting (AnA/AnUCPU)

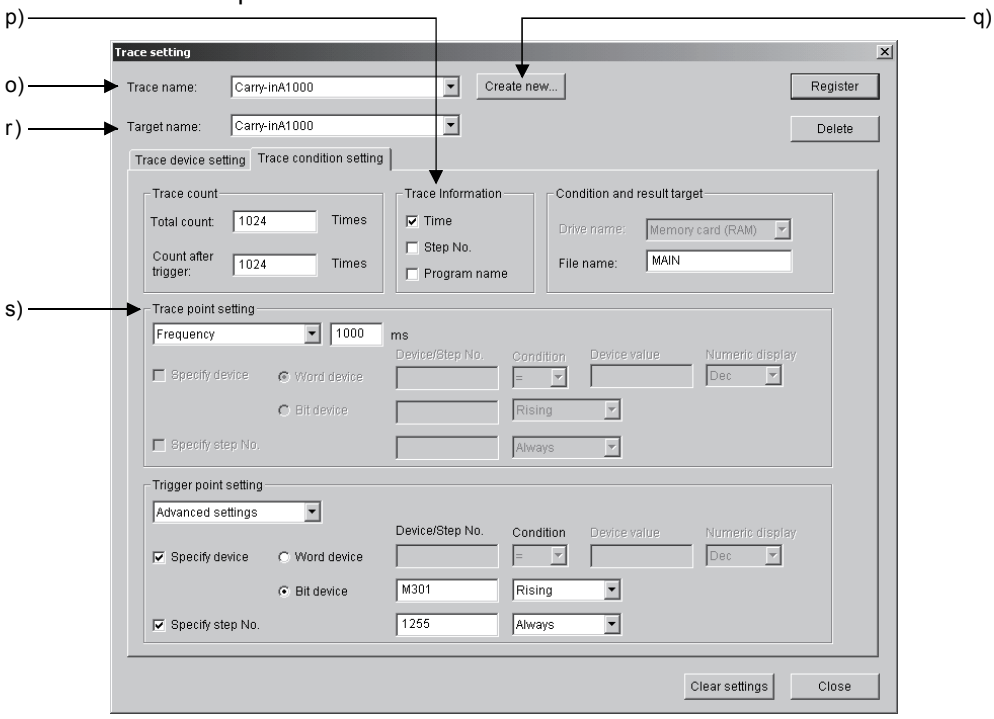
Select from 8K/15K/23K.

n) File register in use (AnA/AnUCPU)

Enter the first No. of file registers for storing the result data.

Only alphanumeric characters can be input.

The last No. will be automatically displayed depending on the number of device points.



[Setting Item]

<<Trace condition setting>>

o) Trace count

Set the number of total trace times (Total count) and the number of trace times after trigger is met (Count after trigger).

p) Trace information (QnA/QnUCPU)

Select the required information from Time/Step No./Program name by checking the corresponding check box(es).

q) Condition and result target (QnACPU)

Select a drive name (memory card A (RAM)/memory card B (RAM)) and file name.

r) Trace point setting

Select from the following by referring to the table on the next page.

Each scan: The devices are traced for each execution of END instruction.

Frequency: The devices are traced at the specified intervals.

Detail setting: The devices are traced when the specified condition is met.

Trace point setting	QCPU				Input Item
	Q	QnA	A	FX	
Each scan	○	○	○	○	
Frequency (ms)	○	○	○	○	Q: 1 to 5000ms, in 1ms units QnA: 5 to 10000ms, in 5ms units A: 10 to 2000ms, in 10ms units FX: 10 to 2000ms, in 10ms units
Detail setting	○	○	—	—	Device specification • When "Word device" is selected Device name, condition (=), value to be compared, numeric display (Dec/Hex). • When "Bit device" is selected Device name, condition (Rising/Falling) Step No. specification Step No. Condition (Always/ON/OFF/Rising/Falling)

○ : Available — : N/A

s) Trigger point setting

Set the item (condition for trace execution) by referring to the following table.

For FX, only bit device can be set as trigger point.

Trace point setting	QCPU				Input Item
	Q	QnA	A	FX	
During instruction execution	○	○	○	—	Q: Trace is executed When TRACE instruction is executed. (Reset is executed when TRACER instruction is executed) QnA/A: When STRA instruction is executed. (Reset is executed when STRAR instruction is executed.)
During trigger operation	○	○	—	○	Trace is executed when "Trigger execution" is executed.
Detail setting	○	○	—	△	Trace is executed when the following conditions are met. Device specification • When "Word device" is selected (Not available for FXCPU) When Device name = device value (Dec/Hex) is met. • When "Bit device" is selected When the condition (Rising/Falling) set for the device is met. Step No. specification (Not available for FXCPU) When the condition (Always/ON/OFF/Rising/Falling) set for the step No. is met

○ : Available △: Some restrictions are applied — : N/A

2) Trace name

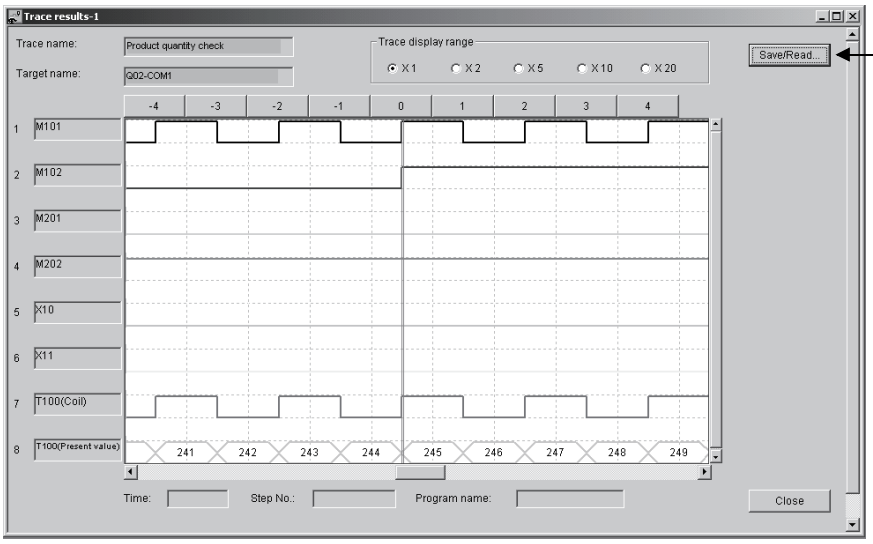
Select a trace name.

3) Target name

The target name corresponding to the target name is displayed.

4) Trace results button

Click the button to display "Trace results" dialog box.
Not usable during trace execution.

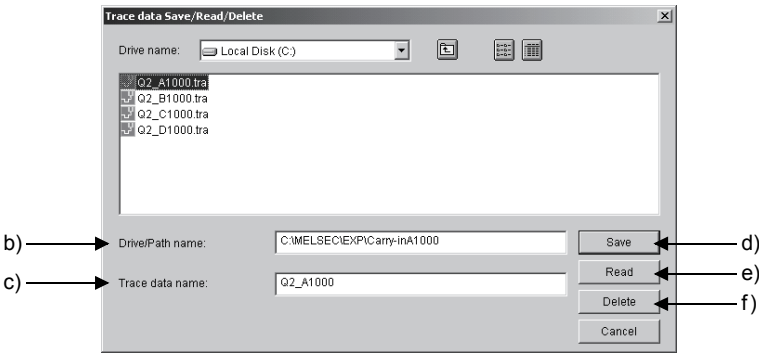


The sampling trace results of the trace names and target names specified from "Trace" dialog box are displayed in a timing chart.
For timing chart operation, refer to Section 9.3

[Setting Item]

a) Save/Read button

Click the button to display "Trace data Save/Read/Delete" dialog box.



[Setting Item]

b) Drive/Path name

Specify the drive/path name for saving trace data.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

c) Trace data name

Specify a trace data name.
For the applicable character type and max. number of characters for text input, refer to section 5.3.
Up to 150 characters are used for both drive/path name and snapshot name.

9 - 17

d) Save button

Click the button to save trace data in the specified folder as the specified name.

e) Read button

Click the button to read the specified file from the specified folder.

f) Delete button

Click the button to delete the specified file (trace data) from the specified folder.

5) Trace operation

Select one operation from Trace start/Trace stop/ Trigger execute and click Execute button.

Trace start: Start a trace. Either of "Total count" or "Trace status" ("Executing", "Stop", "Completed", "Do not execute" or "Error") is displayed at "Trace status" section.

Trace stop: Stop a trace. "Stop" is displayed at "Trace status" section.

Trigger execute (Available only when "During trigger operation" is set to "Trigger point setting" in <<Trace condition setting>> tab.):
Generate a trigger. The number of trace times after trigger is met is displayed at "Trace status" section.

Number of device points that can be traced

PLC CPU	Trace capacity setting	Number of device point that can be set		Device that can be registered	Number of trace times
		Bit device	Word devcie		
AnNCPU	---	8 points	3 points	X, Y, M, L, S, B, F, T, C, D, W, R, A, Z, V	Either of 128, 256, 384, 512, 640, 768, 896 or 1024 times "Total count" ≧ "Count after trigger" "0" can be specified for "Count after trigger"
AnACPU AnUCPU	8K	8 points	3 points		
	15K	16 points	6 points		
	23K	16 points	10 points		
QnACPU	---	50 points	50 points	X, Y, M, L, F, SM, FX, FY, V, DX, DY, T, C, ST, D, SD, FD, B, SB, W, SW, R, Z, ZR U*\G, J*\X, J*\Y, J*\B, J*\SB, J*\W, J*\SW, BL*\S, Extension specification, indexing, bit specification, digit specification	Any of 1 to 8192 times "Total count" ≧ "Count after trigger" "0" can be specified for "Count after trigger"
QCPU	---	50 points	50 points		
FXCPU	---	10 points	3 points	Contact: X, Y, M, S, T, C Coil: T, C, (except YP and MP) Present value: T, C, D, V, Z	"Total count" cannot be specified. "Total count": 1, 64, 128, 192, 256, 320, 384, 448, 512

POINT

- When specifying AnNCPU, make sure to set the memory capacity for trace execution in the PLC parameter setting of GX Developer in advance.
  If the settings are not made, trace cannot be executed.
  (Parameters will not be automatically updated.)
- For Basic model QCPU, FX0 series, FX1 series, remote I/O, trace cannot be executed.
- Starting a trace automatically sets the trace condition.
- Trace results will be automatically read out from the target PLC CPU of the target name when the trace status changes to "Completed" from "Executing". If "Trace stop" is executed, the trace results will be automatically read out from the target PLC CPU of the target name after the trace is stopped.

9.5 Ladder Monitor

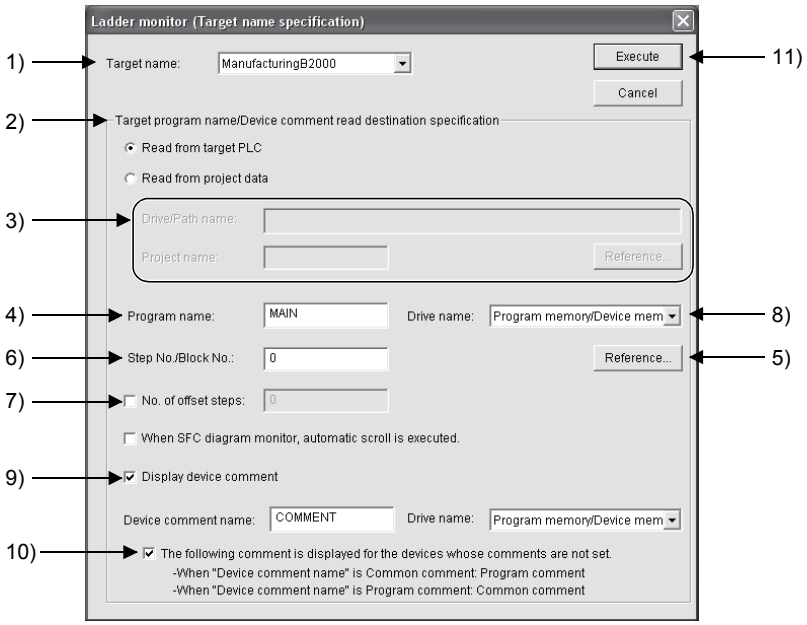
[Purpose]

Monitor the specified ladder and SFC diagram.
The ON/OFF status of contacts or coils and device present values are displayed during monitoring.

[Operation Procedure]

[Confirm] → [Ladder monitor] → [Ladder monitor]

[Setting Screen]



[Setting Item]

1) Target name

Select a target name.

2) Target program name/Device comment read destination specification

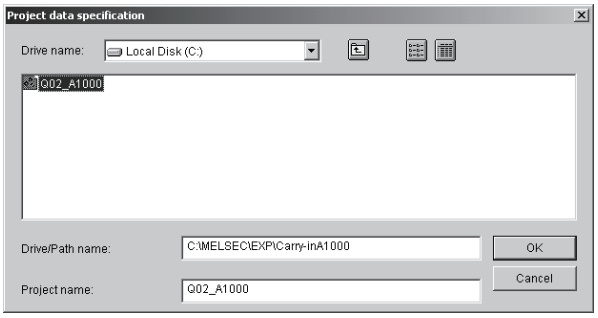
Specify "Read from target PLC" or "Read from project data".

3) Drive/Path name, Project name, Reference button

Available when "Read from project data" is specified.

Click Reference to display "Project data specification" dialog box, and specify a drive/path name and project name.

Up to 150 characters are used for both drive/path name and project name.



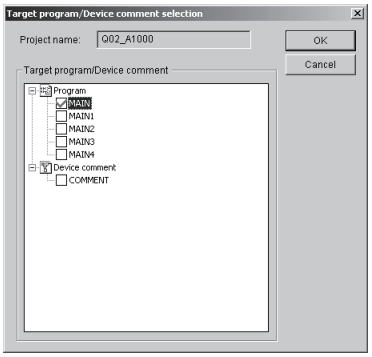
4) Program name

Enter a program name

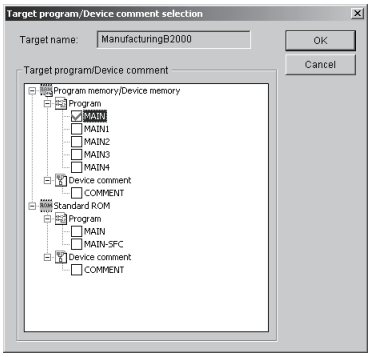
5) Reference button

Select/Enter the program name 4) and device comment name.
Click the button to display "Target program/Device comment selection" dialog box, and check the program name and device comment name. Note that device comment name is displayed only when 9) has been checked.
Only one program and one comment can be selected.

< Read from project data >



< Read from target PLC >



6) Step No./Block No.

The specified position ladder is displayed.

7) No. of offset steps

Enter the number of steps starting from the corresponding first block to be displayed in SFC diagram.

8) Drive name

Available when "Read from target PLC" is selected. Specify the memory selectable when reading from Q/QnACPU.

9) Display device comment

Check the check box when displaying device comments during ladder monitoring.
The comment data list appears by clicking Reference 5)only when the check box is checked.

10) "The following comment is displayed for the devices whose comments are not set." (Available for the QCPU only)

Check the check box when displaying comments of the comment file other than the one specified in the "Device comment name" field, for the devices whose comments are not set.
The 'comment file' refers to either one of the following files.

- Program comment file

  Comments of the program comment file are displayed when the common comment file is specified for the "Device comment name".

- Common comment file

  Comments of the common comment file are displayed when the program comment file is specified for the "Device comment name".

11) Execute button

Click the button to execute a ladder monitor.

9.5.1 Ladder monitor split display

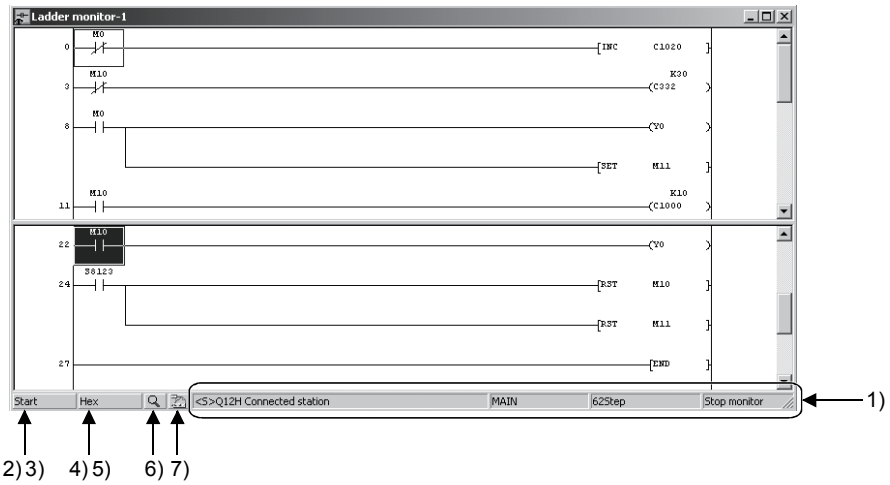
[Purpose]

Split the ladder monitor on the screen.

[Operation Procedure]

[Confirm] → [Ladder monitor] → [Split display]

[Setting Screen]



Start a ladder monitor and select [Split display] from the menu or by right-click operaton; the program will be split into upper and lower panes.

[Setting Item]

1)Status

The target name, program name, number of total steps and monitor status are displayed.

2) Stop monitor button

Click the button to stop the monitor, and the button changes to Start monitor.

3) Start monitor button

Click the button to start the monitor, and the button changes to Stop monitor.

4) Hex display button

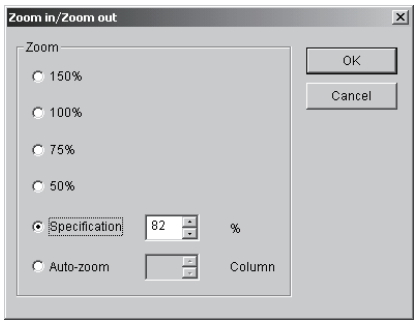
Click the button to display the present value being monitored in Hex, and the button changes to Dec display.

5) Dec display button

Click the button to display the present value being monitored in Dec, and the button changes to Hex display.

6)

Click the button to display "Zoom in/Zoom out" dialog box.



Specify the zoom setting of ladder monitor.
When "Specification" is selected, the zoom setting can be specified in the rage of 50 to 150%.
"Specification" cannot be selected when monitoring a ladder.
By selecting "Auto-zoom", the screen width is automatically adjusted so that whole Ladder/SFC diagram will be displayed on the screen.
(Column setting is available for SFC diagram only.)

7)

Click the button to display "Ladder monitor (Target name specification)" dialog box.
For details, refer to Section 9.5

POINT

The following operations can be performed during ladder monitoring.

- Double-click a ladder to start GX Developer.
- Push Shift + Enter or Shift + double-clicking while selecting a contact or coil by cursor, to forcibly turn the specified device ON/OFF.
  "Device test" dialog box appears by selecting a word device. The present value can be changed from the dialog box.
- Push Enter while selecting a contact or coil by cursor to display "Device search" dialog box.

9.5.2 Cancellation of ladder monitor split display

[Purpose]

Restore the split ladder monitor screen to a single pane.

[Operation Procedure]

[Confirm] → [Ladder monitor] → [Split display cancel]

Select [Split display cancel] from the menu bar or by right click-operation in the split ladder monitor screen; the split setting will be cancelled and the ladder monitor screen will appear as a single pane.

9.5.3 Searching devices in a ladder monitor

[Purpose]

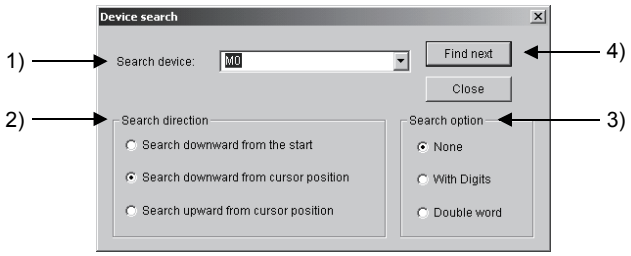
Search specified devices from the ladder on the screen.

[Operation Procedure]

[Confirm] → [Ladder monitor] → [Device search]

Alternatively, select [Device search] displayed by right-click operation.

[Setting Screen]



[Setting Item]

1) Search device

Enter the device to be searched. Up to 10 devices can be registered.
Only alphanumeric characters can be input.

2) Search direction

Select from "Search downward from the start", "Search downward from cursor position" and "Search upward from cursor position".

3) Search option

None: All types of devices will be the search target.
With Digits: Only devices with digit specification will be the search target.
Double word: Only devices of double word will be the search target.

4) Find next button

Click the button to execute a search.

9.5.4 Searching step No./block No. in a ladder monitor

[Setting Purpose]

Search the specified step No./block No. from the ladder on the screen.

[Operation Procedure]

[Confirm] → [Ladder monitor] → [Step No. Search]

Alternatively, select [Step No. Search] displayed by right-click operation.

[Setting Screen]

[Setting Item]

1) Step No.(No. of offset steps)

Enter the step No. to be searched.

For SFC diagram, specify the number of offset steps starting from the first block No.

2) SFC diagram

Use this item when specifying other block in SFC diagram.

When the corresponding block is found, the SFC diagram to be displayed during search operation will be changed.

3) Search button

Click the button to execute a search.

9.5.5 Finding ON/OFF cause for a ladder monitor

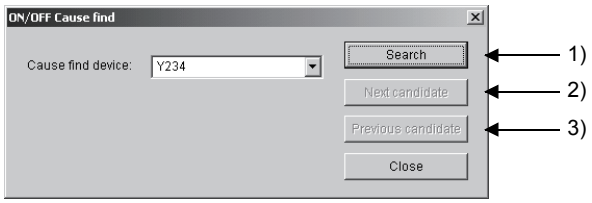
[Purpose]

Search and display the device (contact/coil) that caused the specified coil not to turn ON/OFF during ladder monitoring.

[Operation Procedure]

[Confirm] → [Ladder monitor] → [ON/OFF Cause find]

[Setting Screen]



POINT

- Also, the setting dialog box appears by carrying out the following operation. Right-click the coil selected in a ladder, and select [ON/OFF Cause find] from the displayed shortcut menu.
- When the specified coil is used in different steps or the specified device is used for different output timings, a search is executed at the step of lower No.

[Setting Item]

1) Search button

Search for the corresponding device.

2) Next candidate button

Search for other corresponding device.

3) Previous candidate button

Return to the previously searched device.

The devices used in the following instructions are applicable for the ON/OFF cause find function.

	ON/OFF cause find instruction	Instruction
Contact	Devices used in the contact-equivalent instructions other than PLS type and comparison type	LD, LDI, AND, ANDI, OR, ORI, ANB, ORB, MPS, MPP, MRD
Coil	Devices used in OUT(H), SET, RST instructions.	OUT, OUTH, SET, RST

9.6 Local Device Monitor

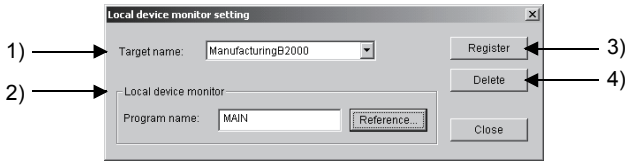
[Purpose]

Specify the local device monitor settings to be registered/cancelled.

[Operation Procedure]

[Confirm] → [Local device monitor setting]

[Setting Screen]



[Setting Item]

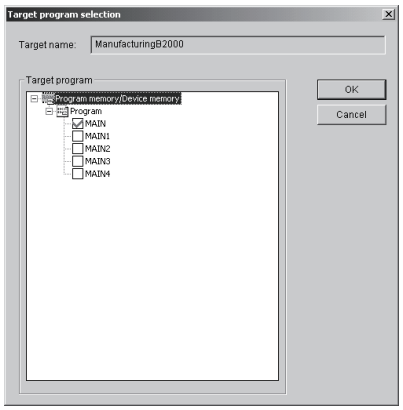
1) Target name

Select the target name for which local device monitor is to be set.

2) Local device monitor

Registered program names (if any) are displayed at the time of target name selection.

A program name can be directly entered in the input box, or can be selected from the options in "Target program selection" dialog box, which appears by clicking Reference button.



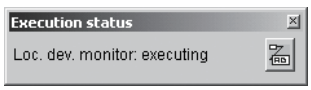
One program can be selected for monitor target.

3) Resister button

Register the target name and program into the PLC CPU.

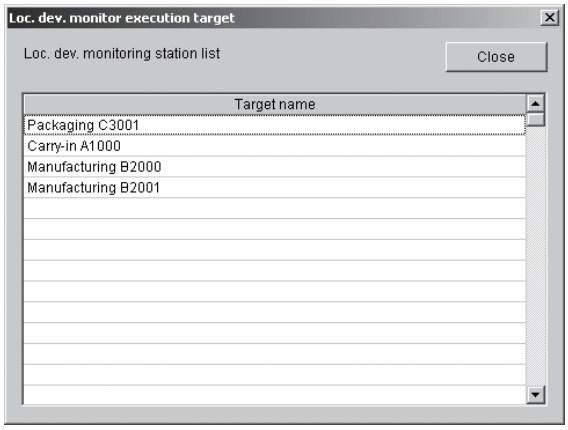
4) Delete button

Delete the target name and program from the PLC CPU.



This dialog box appears if the local device settings remain in the PLC CPU when Close button is clicked.

Click to display "Loc.dev.Monitor execution target" dialog box.



The target names that include local device monitor settings are displayed in list format.

POINT

- Only Q/QnACPU, memory/program memory are available.
- Devices to be monitored in device monitor, timing chart, device test, error diagnostics, ladder monitor and operation analysis can be the local device monitor target.

9.7 Error Diagnostics

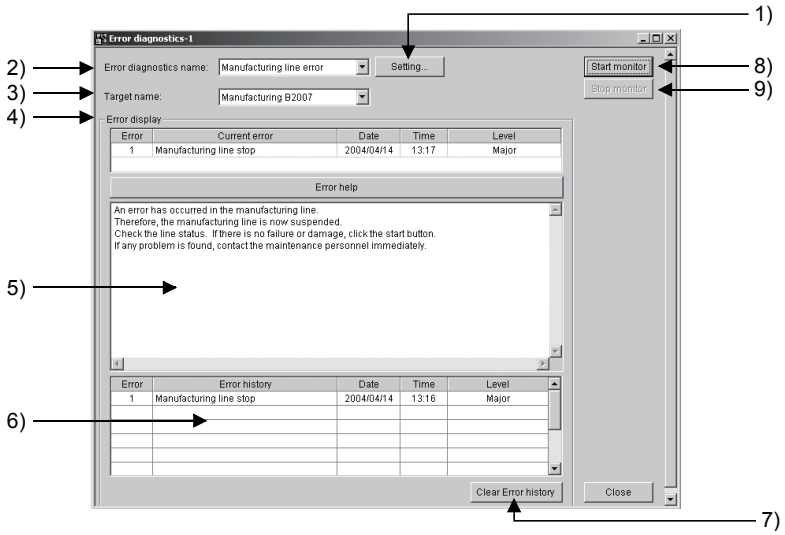
[Purpose]

The error No., error condition and error message can be set so that the error details (place and status) will be informed at the time of error occurrence.
When an error diagnostics name is set to each of the settings arbitrarily, the diagnostics can be executed by selecting the error diagnostics name without the necessity to make the relevant settings for each time.
Multiple "Error diagnostics" dialog boxes can be simultaneously started.

[Operation Procedure]

[Diagnostics] → [Error diagnostics]

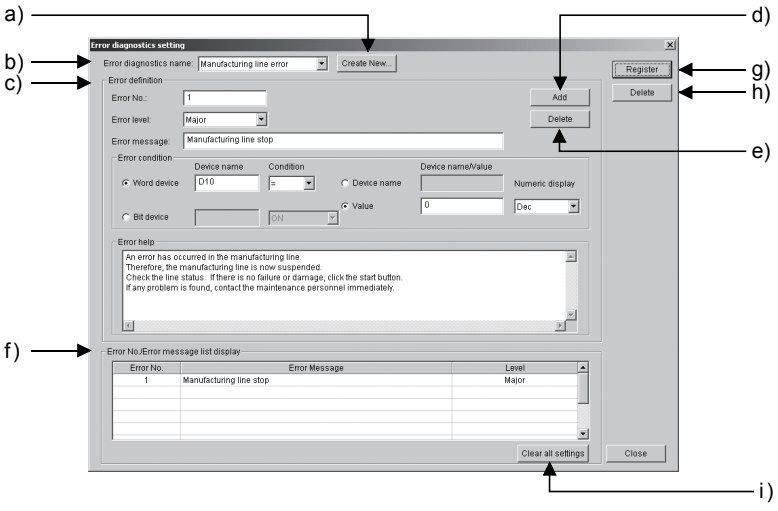
[Setting Screen]



[Setting Item]

1) Setting button

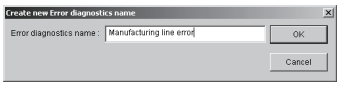
Click the button to display "Error diagnostics setting" dialog box. Set the condition for error occurrence and/or error help, and put error diagnostics names to the settings.



[Setting Item]

a) Create New button

Click the button to display "Create new Error diagnostics name" dialog box, and enter a new error diagnostics name.
For the applicable character type and max. number of characters for text input, refer to section 5.3.



b) Error diagnostics name

The error diagnostics name is displayed.

c) Error definition

Set the error No., error level, error message, error condition, error help.

Error No: Set the No. in the range of –32768 to 32767. Up to 256 error No. can be registered for an error diagnostics name.

Error level: Set the error level.

Error message: Enter the message to be displayed at the time of error occurrence.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

Error condition

Set the condition for error occurrence.

When "Word device" is selected.

Device name: Set the word device name to be used for the condition for error occurrence.

Condition: Select the condition for error occurrence from the following.
"= (equal) ", ">= (greater than or equal to)", "<= (less than or equal to)", "< > (not equal to)", "> (greater than)", "< (less than)".

Device name/value:
Select the target data of the condition. When selecting "Device name", specify a word device. When selecting "Value", enter the value and select "Dec" or "Hex" for "Numeric display".

When "Bit device" is selected.

Device name: Set the bit device name to be used for the condition for error occurrence.

Condition: Select the condition for error occurrence from the following.
For T/C device, the target is a contact.
"ON", "OFF", "Rising", "Falling"

Error help: Enter the help sentence to be displayed at the time of error occurrence.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

d) Add button

Click the button to add the set error definition into "Error No./Error message list display" f).

e) Delete button

Click the button to delete the error currently displayed on the screen.

f) Error No./Error message list display

The set error No., error message and error level are displayed.
Click a line within the list to display the settings corresponding to the selected line at "Error definition" section c).

g) Resister button

Click the button to register the set error diagnostics name and the relevant settings.

h) Delete button

Click the button to delete the selected error diagnostics name and the relevant settings.

i) Clear all settings button

Click the button to clear all error diagnostics settings displayed at "Error diagnostics name" section b).

2) Error diagnostics name

Select an error diagnostics name.

3) Target name

Select a target name.

4) Error display

The latest error is displayed. If multiple errors have occurred, the most serious one (Major>Moderate>Minor>Warning).

5) Error help

The error help is displayed.

6) Error history

The error history, i.e., records of occurred errors are displayed. Up to 1024 records are displayed.
Clicking an error in the error history displays the error help corresponding to the selected one.

7) Clear Error history button

Click the button to clear the current error in "Error display" section and error records in "Error history" section.

8) Start monitor button

Start an error diagnostics.

9) Stop monitor button

Stop an error diagnostics.

[Operation Procedure]

The following explains how to add, change and delete an error diagnostics name.

When adding an error diagnostics

1. Click [Setting] in "Error diagnostics" dialog box to display "Error diagnostics setting" dialog box.
2. Click [Create New] in "Error diagnostics setting" dialog box.
3. Enter a new error diagnostics name in " Create new Error diagnostics name " dialog box. If "Error definition" c) has already been set at this time, the settings can be cleared by clicking [Clear all settings].
4. Enter the error definition and error help, and click [Add] to add the settings.
   Then, the added settings are added to "Error No./Error message list display" f).
5. When the settings are completed, click [Resister] to register the error diagnostics name and the relevant settings.

When editing a registered error diagnostics name

1. Select the error diagnostics name to be edited at "Error diagnostics name" a) section in "Error diagnostics setting" dialog box, and click [Setting].
2. Select the error to be edited in "Error No./Error message list display" f). The selected error settings are displayed.
3. Change the settings. And click [Add] to ensure the changed settings.
   When an error is newly added, the error will be displayed in "Error No./Error message list display" f).
4. After the change operation is completed, click [Resister] to register the changed settings.

When deleting the settings of an error diagnostics name

1. Select the error diagnostics name of which settings to be deleted at "Error diagnostics name" section in "Error diagnostics setting" dialog box.
2. Select the error to be deleted in "Error No./Error message list display" f). The selected error settings are displayed.
3. When [Delete] e) is clicked, a confirmation dialog box appears. Click [Yes] to delete the selected error.
4. After the change operation is completed, click [Resister] to register the changed settings.

When deleting an error diagnostics name

1. Select an error diagnostics name at "Error diagnostics name" section in "Error diagnostics setting" dialog box.
2. When [Delete] h) in "Error diagnostics setting" dialog box is clicked, a confirmation dialog box appears. Click [Yes] to delete the selected error diagnostics name.

9.8 Operation Analysis

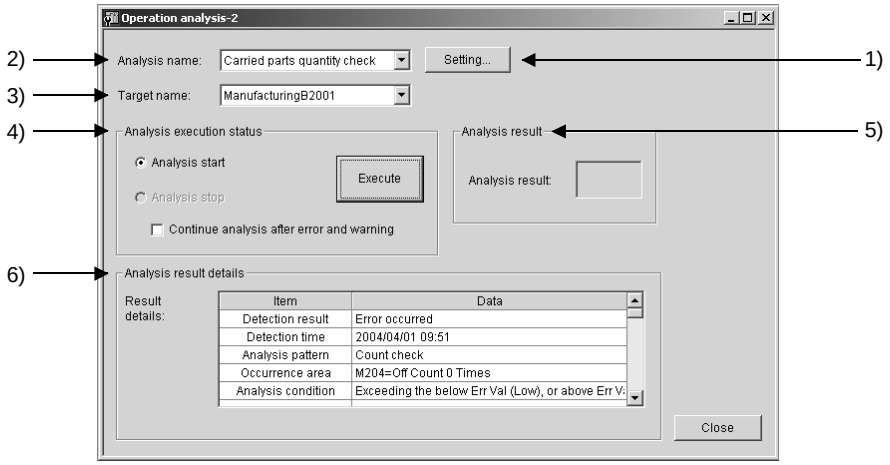
[Purpose]

Analyze the PLC CPU operation.
Each item in "Analysis setting" dialog box must be set in advance.
Operation Analysis can be selected from "Order check", "Count check", "Normal/Fault pattern check", "High/Low limit value check".
This function compares the program of the specified target name with the set condition, detects the error position (if any) as error or warning and displays the results.
When an operation analysis name is set to each of settings, the analysis can be executed based on the same settings by selecting the operation analysis name without the necessity to set the condition for each time.
Multiple operation analysis dialog boxes can be simultaneously started.

[Operation Procedure]

[Diagnostics] → [Operation analysis]

[Setting Screen]



[Setting Item]

1) Setting button

Click the button to display "Analysis setting" dialog box. Enter an operation analysis name and set the analysis condition. For details, refer to Section 9.8.1.

2) Analysis name

Select the operation analysis name to be executed.

3) Target name

Set the target name to be analyzed.

4) Analysis execution status

Select "Analysis start" or "Analysis stop". Click Execute to execute the selected operation.
By checking "Continue analysis after error and warning. ", the analysis can be continued if an error or warning occurs. (Except "Normal/Fault pattern check")

To stop the operation, select "Analysis stop" and click Execute.

5) Analysis result

The analysis result is displayed by color. The corresponding position is shown as "Warning" or "Error".
Green: Normal operation (as well during diagnostics).
Yellow: Warning occurrence.
Red: Error occurrence.

6) Analysis result details

The analysis result (error/warning) is displayed.
For "Normal/Fault pattern check", clicking the analysis condition data displays the details in list format.
The error history, i.e., records of analysis results are displayed. Up to 256 records are displayed.
When clearing the analysis results, close "Operation analysis" dialog box or start the operation analysis.

Result Details

No.	Details		Displayed Item
1	Detection result		Level (Warning/Error) • Warning occurrence • Error occurrence
2	Detection time		Waning/Error occurrence time Format: YYYY/MM/DD HH:MM
3	Analysis pattern		Analysis pattern specified in operation analysis • Order check • Count check • Normal/Fault pattern check • High/Low limit value check
4	Occurrence area	Order check	• [Comparison timing chart diagram] (Scale No.: [Scale No.])
		Count check	• [Corresponding device name] = [ON count/OFF count] [Count] times
		Normal/Fault pattern check	• [Comparison timing chart diagram] (Scale No.: [Scale No.])
		High/Low limit value check	• [Corresponding device name] = [Device value] ([Dec|Hex])
5	Analysis condition	Order check	• [Device name] is not set to [ON/OFF]• • No change in Device value.
		Count check	• Exceeding the below Err Val (Low). • Exceeding the below Warn (Low). • Exceeding the above Warn (High). • Exceeding the above Err Val (High). • Exceeding the below Warn (Low), or above Warn (High). • Exceeding the below Err Val (Low), or above Err Val (High). • Exceeding the above Warn (Low), and below Warn (High). • Exceeding the above Err Val (Low), and below Err Val (High).
		Normal/Fault pattern check	• Does not match with the normal pattern. ([Number of the mismatched] spot) • Matches with the Fault pattern
		High/Low limit value check	• Exceeding the below Err Val (Low). • Exceeding the below Warn (Low). • Exceeding the above Warn (High). • Exceeding the above Err Val (High). • Exceeding the below Warn (Low), or above Warn (High). • Exceeding the below Err Val (Low), or above Err Val (High). • Exceeding the above Warn (Low), and below Warn (High). • Exceeding the above Err Val (Low), and below Err Val (High).

[Example of displayed result]

Order check

Detection result	Error occurrence
Detection time	2003/12/22 14:59
Analysis pattern	Order check
Error position	Parts carry-in A (Scale No.: -547)
Analysis condition	B302 is not set to ON.

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9.8.1 Operation analysis setting

[Purpose]

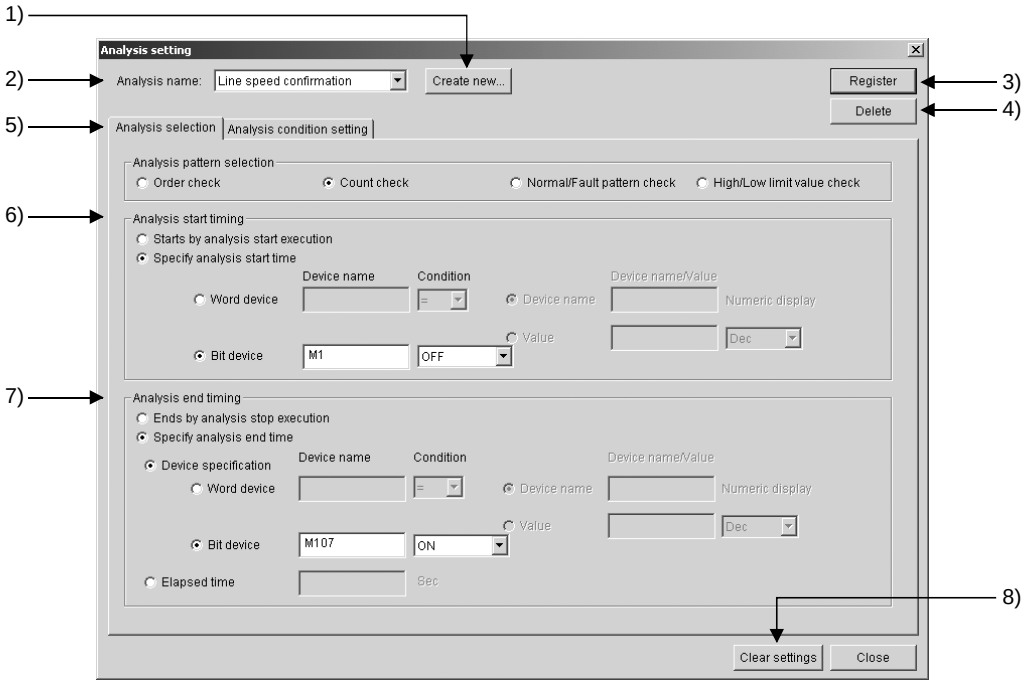
Set the analysis condition.

[Operation Procedure]

[Diagnostics] → [Operation analysis] → Setting button

[Setting Screen]

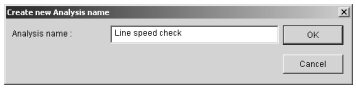
(1) << Analysis selection >>



[Setting Item]

1) Create New button

Click the button to display "Create new Analysis name" dialog box.
Create a new operation analysis name. For the applicable character type and max. number of characters for text input, refer to section 5.3.



2) Analysis name

Select the operation analysis name of which detail conditions to be set.

3) Resister button

Click the button to register the set operation analysis name and data.

4) Delete button

Click the button to delete the selected operation analysis name and data.

5) Analysis pattern selection

Select an analysis pattern.

When selecting "Order check" or "Normal/Fault pattern check", the timing chart diagram of normal or fault pattern must be created in advance, as required for comparing with the timing chart diagram.

In either case, create the timing chart diagram using bit devices only, as the analysis is executed by bit devices.

For details of timing chart diagram, refer to Section 9.3.

Order check: Compares the ON/OFF order of the specified bit device and the ON/OFF time with the timing chart diagram to detect an error.

When the operation analysis is interrupted due to the analysis stop timing or analysis stop execution, the analysis results in "No error detected", if no differences have been found in the comparison results.

Count check: Compares the ON or OFF count of the specified bit device with the count value set in the condition to detect an error or warning.

(Count check)

Analyze in order to find whether the ON/OFF count of the bit device exceeds or lowers the count value set in the condition. (Error analysis)

(Warning range check)

Analyze in order to find whether the ON/OFF count of the bit device is within the warning range before error analysis ("greater than or equal to", "less than or equal to" or "greater than or equal to/ less than or equal to"). (Waning analysis)

Norma/Fault pattern check:

Compares the bit device ON or OFF pattern at the specified timing with the timing chart diagram to detect an error.

For normal pattern check, an error is detected when the PLC CPU operation does not match with the timing chart diagram of normal pattern.

For fault pattern check, an error is detected when the PLC CPU operation match with the timing chart diagram of fault pattern.

High/Low limit value check:

Compares the specified word device value with the set high/low limit value to detect an error or warning.

(Above the high limit value)

Analyze in order to find whether the word device value exceeds the set high limit value. (Error analysis)

(Below the low limit value)

Analyze in order to find whether the word device value lowers the set low limit value. (Error analysis)

(Warning range check)

Analyze in order to find whether the word device value is within the warning range before error analysis ("greater than or equal to", "less than or equal to" or "greater than or equal to/ less than or equal to"). (Waning analysis)

If multiple check conditions have been set for one device, the analysis is executed when any of them is met.

6) Analysis start timing

Set the timing to start the operation analysis.

Starts by analysis start execution:

Select the item to start the operation analysis at the timing when [Execute] is clicked in "Operation analysis" dialog box.

Specify analysis start time:

Select the item to start the operation analysis based on the set device name, condition, and device status.

When "Word device" is selected

Device name:	Set a word device name to be used for the error, warning occurrence condition.
Condition:	Select a condition for detecting an error or warning from the following. "= (equal)", ">= (greater than or equal to)", "<= (less than or equal to)", "< > (not equal to)", "> (greater than)", "< (less than)".
Device name/value:	Select the data used for the condition When selecting "Device name", specify the word device to be compared. When selecting "Value", select "Dec" or "Hex" for "Numeric display".

When "Bit device" is selected

Device name:	Set a bit device name to be used for the error, warning occurrence condition.
Condition:	Select a condition for detecting an error or warning from the following. (T/C device can be set for "Contact" only.) "ON", "OFF", "Rising" or "Falling".

7) Analysis end timing

Set the timing to end the operation analysis.

Ends by analysis stop execution:

Select the item to end the operation analysis at the timing when "Analysis stop" is set at "Analysis execution status" section and [Execute] is clicked in "Operation analysis" dialog box.

Specify analysis end time:

Select the item to end the operation analysis based on the set device name, condition, and device status. The setting items are the same as "Analysis start timing" 6).

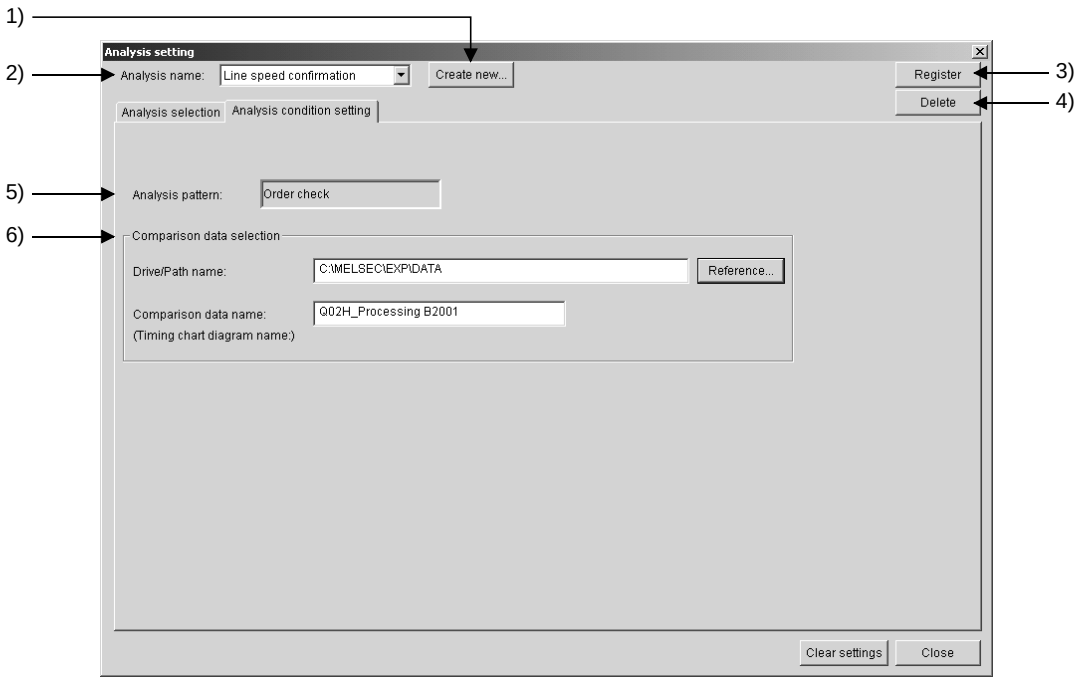
Elapsed time: Set the timing to end the operation analysis, i.e., the time elapsed after operation analysis start, in the range of 1 to 600 seconds.

8) [Clear settings] button

Click the button to clear the operation analysis name settings displayed at "Analysis name" field 2) in "Analysis setting" dialog box.

[Setting Screen]

(2)-a <<Analysis condition setting>> (Analysis pattern: Order check)



[Setting Item]

1) Create new button

Click the button to display "Create new Analysis name" dialog box.
For details, refer to 1) when <<Analysis selection>> is selected.

2) Analysis name

Select the operation analysis name of which detail conditions to be set.

3) Resister button

Click the button to register the set operation analysis name and data.

4) Delete button

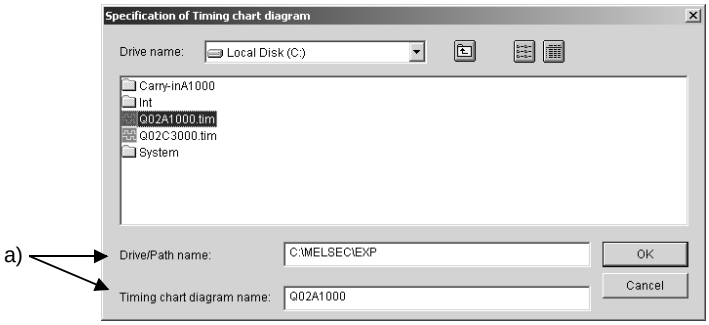
Click the button to delete the selected operation analysis name and data.

5) Analysis pattern

The operation pattern selected at "Analysis pattern selection" section in <<Analysis selection>> is displayed

6) Comparison data selection

Select the data to be compared with the analysis target at "Drive/Path name", "Comparison data name" (Timing chart diagram name) section.
When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.
Up to 150 characters are used for both drive/path name and timing chart diagram name.
Alternatively, select them from the options provided in "Specification of Timing chart diagram" dialog box that appears by clicking Reference button.



[Setting Item]

a) Drive/Path name, Timing chart diagram name

Specify the timing chart diagram name to be read.

The same devices for the timing chart diagram are analyzed.

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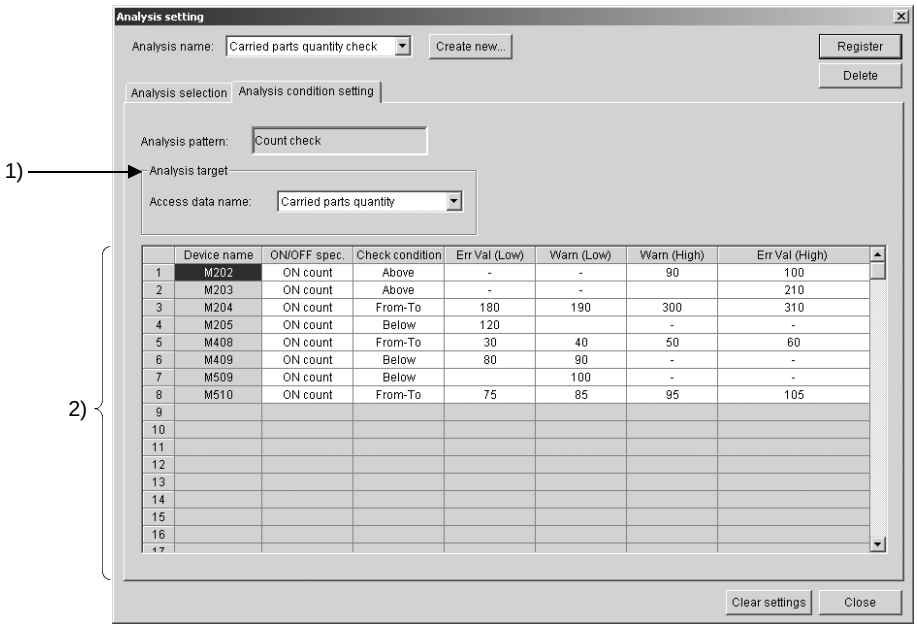
[Setting Screen]

(2)-b <<Analysis condition setting>> (Analysis pattern: Count check)



	Device name	ON/OFF spec.	Check condition	Err Val (Low)	Warn (Low)	Warn (High)	Err Val (High)
1	M202	ON count	Above	-	-	90	100
2	M203	ON count	Above	-	-		210
3	M204	ON count	From-To	180	190	300	310
4	M205	ON count	Below	120		-	-
5	M408	ON count	From-To	30	40	50	60
6	M409	ON count	Below	80	90	-	-
7	M509	ON count	Below		100	-	-
8	M510	ON count	From-To	75	85	95	105
9							
10							
11							
12							
13							
14							
15							
16							

[Setting Item]

1) Analysis target

Specify the analysis target device by access data name. However, the access data name including word devices is inapplicable.
For access data name setting, refer to Section 8.3.

2) Analysis condition display

The bit devices and set analysis condition (count) are displayed in list format. Device addition is not allowed.
However, devices can be set arbitrarily only when "Direct specification" is selected at "Analysis target" section 1), which is very effective for setting some specific devices.
The relevant fields are as follows:

Device name: Can be directly entered only when "Direct specification" is selected.
For the applicable character type and max. number of characters for text input, refer to section 5.3.
Up to 256 devices can be registered.
Entering this field allows the other fields to be entered.

ON/OFF spec.: Select whether the ON or OFF count of the target device will be analyzed.

Check condition: Select an error/warning detection condition from the following.
"Above", "Below" or "From-To"

Err Val(Low), Warn(Low), Warn(High), Err Val(High):
They are reference values; if the target device turns ON or OFF more or less times than the set value, GX Explorer determines that an error or warning has occurred. Depending on the condition selected in "Check condition", some fields may not be entered. In this case, "-" appears.
Set the value in the range of 1 to 65535.

The following table shows the check condition ("Above", "Below" or "From-To") settings and the corresponding analysis.
If multiple check conditions have been set for one device, the analysis is executed when any of them is met.

Check condition	Setting position to be entered		Check pattern	Operation analysis range
	Warning analysis	Error analysis		
Above	Warning and analysis based on the value greater than or equal to Warn(High)	—	Count-over check	Refer to 1).
	—	Error and analysis based on the value greater than or equal to Err Val(High)		Refer to 2).
	Warning and analysis based on the value greater than or equal to Warn(High)	Error and analysis based on the value greater than or equal to Err Val(High)		Refer to 3).
Below	Warning and analysis based on the value less than or equal to Warn(Low)	—	Count-insufficient check	Refer to 4).
	—	Error and analysis based on the value less than or equal to Err Val(Low)		Refer to 5).
	Warning and analysis based on the value less than or equal to Warn(Low)	Error and analysis based on the value less than or equal to Err Val(Low)		Refer to 6).
From-To	Warning and analysis based on the value less than or equal to Warn(Low), or greater than or equal to Warn(High)	—	Count-range check	Refer to 7).
	—	Error and analysis based on the value less than or equal to Err Val(Low), or greater than or equal to Err Val(High)		Refer to 8).
	Warning and analysis based on the value less than or equal to Warn(Low), or greater than or equal to Warn(High)	Error and analysis based on the value less than or equal to Err Val(Low), or greater than or equal to Err Val(High)		Refer to 9).
	Warning and analysis based on the value greater than or equal to Warn(Low) and less than or equal to Warn(High)	Error and analysis based on the value greater than or equal to Err Val(Low) and less than or equal to Err Val(High)		Refer to 10).

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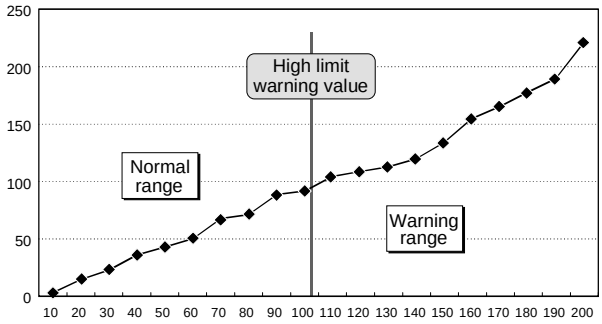
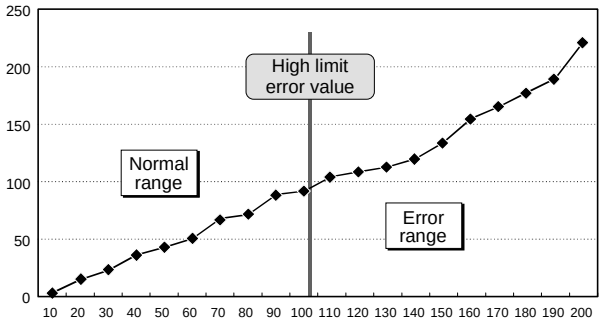
1) High limit waning value setting



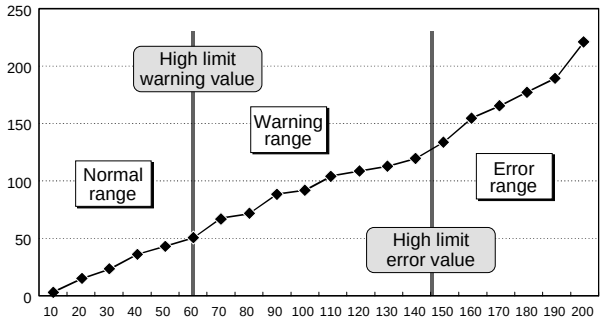
- Warning occurs when greater than or equal to the high limit warning value.
- Normal operation when less than the high limit warning value.

2) High limit error value setting



- Error occurs when greater than or equal to the high limit error value.
- Normal operation when less than the high limit error value.

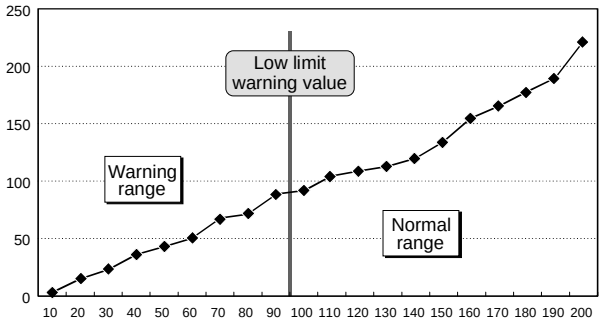
3) High limit waning value and high limit error value setting



- Error occurs when greater than or equal to the high limit error value.
- Warning occurs when greater than or equal to the high limit warning value, or less than the high limit error value.
- Normal operation when less than the high limit warning value.

* Settings must be made to ensure high limit warning value < high limit error value.

4) Low limit warning value setting



- Warning occurs when less than or equal to the low limit warning value.
- Normal operation when greater than the low limit warning value.

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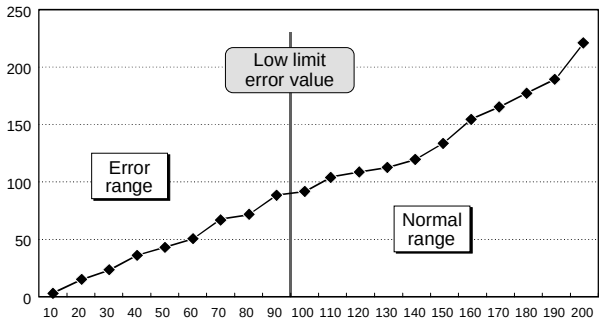
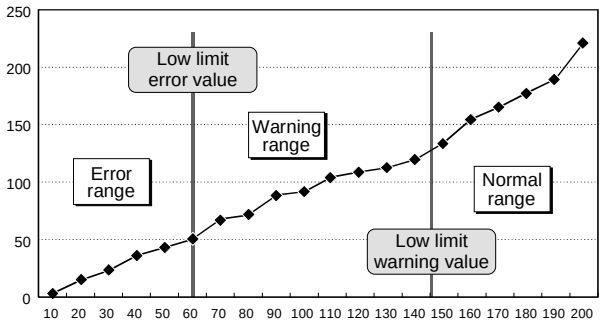
5) Low limit error value setting



- Error occurs when less than or equal to the low limit error value.
- Normal operation when greater than the low limit error value.

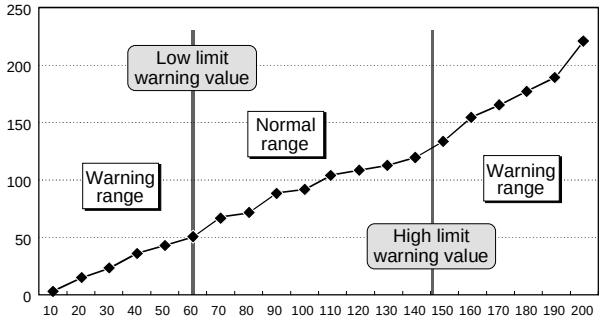
6) Low limit warning value and low limit error value setting



- Error occurs when less than or equal to the low limit error value.
- Warning occurs when greater than the low limit error value, and less than or equal to the low limit warning value.
- Normal operation when greater than the low limit warning value.

* Settings must be made to ensure low limit error value < low limit warning value.

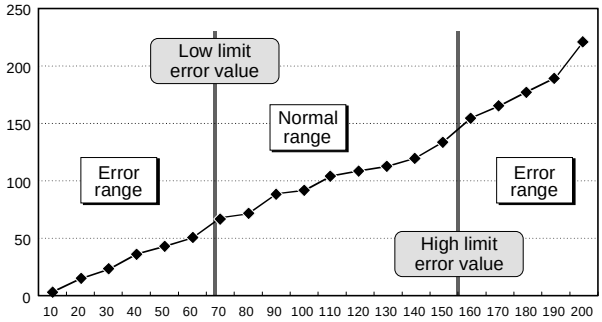
7) Low limit warning value and high limit warning value setting



- Warning occurs when less than or equal to the low limit warning value
- Normal operation when greater than the low limit warning value, and less than the high limit warning value.
- Warning occurs when less than or equal to the high limit warning value.

* Settings must be made to ensure low limit warning value < high limit warning value.

8) Low limit error value and high limit error value setting



- Error occurs when less than or equal to the low limit error value.
- Normal operation when greater than the low limit error value, and less than high limit error value.
- Error occurs when greater than or equal to the high limit error value.

* Settings must be made to ensure low limit error value < high limit error value.

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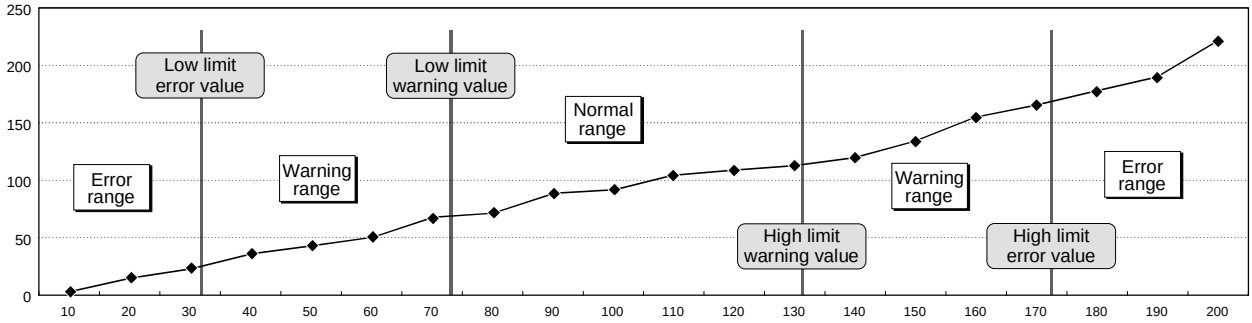
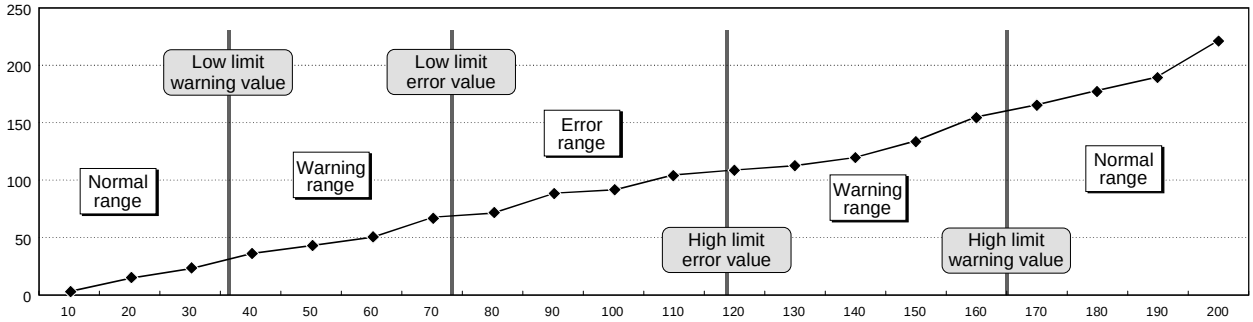
9) Low limit warning value and low limit error value, high limit warning value and high limit error value setting



- Error occurs when less than or equal to the low limit error value, or greater than or equal to the high limit error value.
- Warning occurs when greater than the low limit error value and less than or equal to the low limit warning value, or greater than or equal to the high limit warning value and less than the high limit error value.
- Normal operation when greater than the low limit warning value, and less than the high limit warning value.

* Settings must be made to ensure low limit error value < low limit warning value < high limit warning value < high limit error value.

10) Low limit warning value and low limit error value, high limit warning value and high limit error value setting (4 values must be set.)



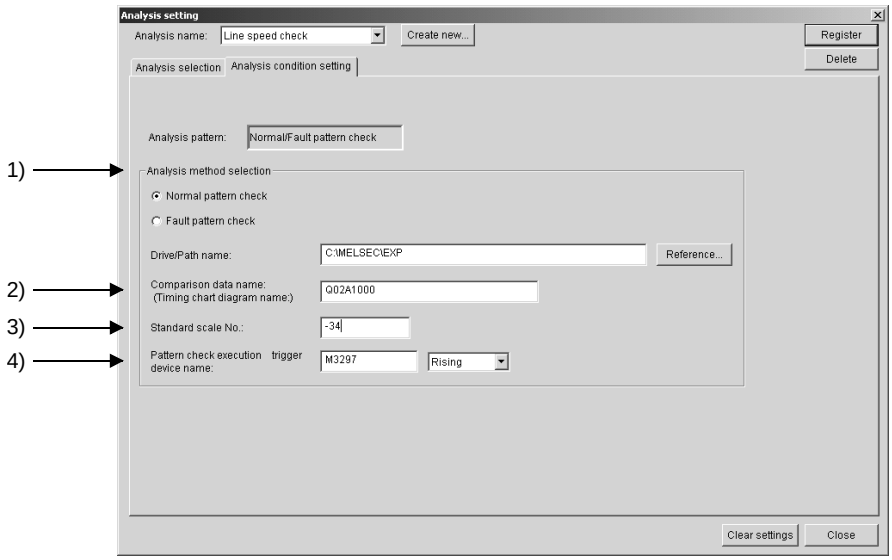
- Normal operation when less than the low limit warning value, or greater than the high limit warning value.
- Warning occurs when greater than or equal to the low limit warning value and less that the low limit error value, or greater than the high limit error value and less than or equal to the high limit warning value.
- Error occurs when greater than or equal to the low limit error value, and less than or equal to the high limit error value.

* Settings must be made to low limit warning value < low limit error value < high limit error value < high limit warning value.

POINT

- When "Not equal to" is selected for the check condition, only "Err Val(Low)" can be entered.
  The analysis results in error when the device value is not equal to the error value.
- For warning value and error value, only either of high or low value can be set.
- When making the settings by combining warning value and error value, make sure to ensure the following.
  Low limit error value < Low limit warning value
  High limit warning value < High limit error value.

(2)-c <<Analysis condition setting>>
(Analysis pattern: Normal/Fault pattern check)



[Setting Item]

1) Analysis method selection

Select an analysis method.

Normal pattern check:

The analysis results in error when the data does not match with the timing chart diagram of normal pattern.

Fault pattern check:

The analysis results in error when the data matches with the timing chart diagram of fault pattern.

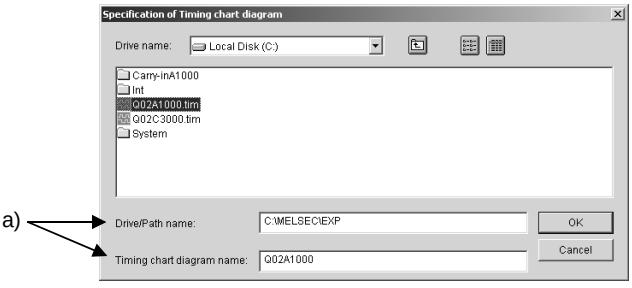
Drive/Path name:

Select the data to be compared with the analysis target at "Drive/Path name", "Comparison data name" (Timing chart diagram name) section.

When directly entering the name, confirm the applicable character type and max. number of characters for text input described in Section 5.3.

Up to 150 characters are used for both drive/path name and timing chart diagram name.

Alternatively, select them from the options provided in "Specification of Timing chart diagram" dialog box that appears by clicking Reference button.



[Setting Item]

a) Drive/Path name, Timing chart diagram name

Specify the timing chart diagram name to be read.

The same devices for the timing chart diagram are analyzed.

2) Comparison data name (Timing chart diagram name)

Specify the timing chart diagram name to be compared.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

3) Standard scale No.

When setting a pattern for data comparison from the timing chart diagram, specify the time point that corresponds to the pattern using the scale No. displayed at the top of that timing chart diagram.

4) Pattern check execution trigger device name

Set the device name to specify the pattern check start.
Specify "Rising" or "falling" as the condition.

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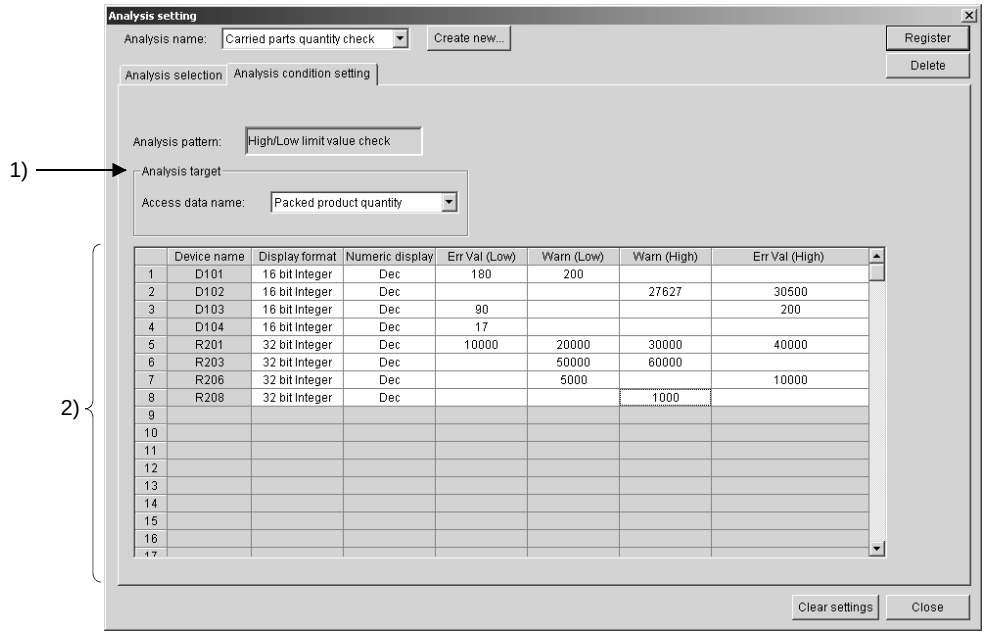
(2)-d <<Analysis condition setting>>
(Analysis pattern: High/Low limit value check)



	Device name	Display format	Numeric display	Err Val (Low)	Warn (Low)	Warn (High)	Err Val (High)
1	D101	16 bit Integer	Dec	180	200		
2	D102	16 bit Integer	Dec			27627	30500
3	D103	16 bit Integer	Dec	90			200
4	D104	16 bit Integer	Dec	17			
5	R201	32 bit Integer	Dec	10000	20000	30000	40000
6	R203	32 bit Integer	Dec		50000	60000	
7	R206	32 bit Integer	Dec		5000		10000
8	R208	32 bit Integer	Dec			1000	
9							
10							
11							
12							
13							
14							
15							
16							

[Setting Item]

1) Analysis target

Specify the device to be analyzed by access data name.
However, the access data name that includes bit devices, ASCII characters or devices of which display format is real number is inapplicable.
For access data name setting, refer to Section 8.3.

2) Analysis condition display

The bit devices and set analysis condition (count) are displayed in list format. Device addition is not allowed.
However, devices can be set arbitrarily only when "Direct specification" is selected at "Analysis target" section 1), which is very effective for setting some specific devices.
The relevant fields are as follows:

Device name: Can be directly entered only when "Direct specification" is selected.
For the applicable character type and max. number of characters for text input, refer to section 5.3.
Up to 256 devices can be registered.
Entering this field allows the other fields to be entered.

Display format: Specify the display format (16 bit Integer/ 32 bit Integer)

Numeric display: Specify the numeric display (Dec/Hex).

Err Val(Low), Warn(Low), Warn(High), Err Val(High):
They are reference values; if the target device is greater than (less than) the set value, GX Explorer determines that an error or warning has occurred.

The following shows the available setting range.

Display format	Numeric display	Available setting range
16 bit Integer	Dec	-32768 to 32767
	Hex	0 to FFFF
32 bit Integer	Dec	-2147483648 to 2147483647
	Hex	0 to FFFFFFFF

The following table shows the check condition settings and the corresponding analysis.
If multiple check conditions have been set for one device, the analysis is executed when any of them is met.

Setting position to be entered		Check pattern	Operation analysis range *1
Warning analysis	Error analysis		
Warning and analysis based on the value greater than or equal to Warn(High)	—	High limit value over check	Refer to 1).
—	Error and analysis based on the value greater than or equal to Err Val(High)		Refer to 2).
Warning and analysis based on the value greater than or equal to Warn(High)	Error and analysis based on the value greater than or equal to Err Val(High)		Refer to 3).
Warning and analysis based on the value less than or equal to Warn(Low)	—	Lower limit value insufficient check	Refer to 4).
—	Error and analysis based on the value less than or equal to Err Val(Low)		Refer to 5).
Warning and analysis based on the value less than or equal to Warn(Low)	Error and analysis based on the value less than or equal to Err Val(Low)		Refer to 6).
Warning and analysis based on the value less than or equal to Warn(Low), or greater than or equal to Warn(High)	—	High/Low limit value range check	Refer to 7).
—	Error and analysis based on the value less than or equal to Err Val(Low), or greater than or equal to Err Val(High)		Refer to 8).
Warning and analysis based on the value less than or equal to Warn(Low), or greater than or equal to Warn(High)	Error and analysis based on the value less than or equal to Err Val(Low), or greater than or equal to Err Val(High)		Refer to 9).
Warning and analysis based on the value greater than or equal to Warn(Low) and less than or equal to Warn(High)	Error and analysis based on the value greater than or equal to Err Val(Low) and less than or equal to Err Val(High)		Refer to 10).

*1: For 1) to 10) in the operation analysis range, refer to 1) to 10) in the operation analysis range of (2)-b << Analysis condition setting >> (Analysis pattern: Count check).

POINT

- Make the settings for error value and warning value, while paying attention to the following.
  High limit value check
  Enter a value at "Err Val(High)" and "Warn(High)" section.
  However, an error occurs when high limit warning value < high limit error value is not set.
  Low limit value check
  Enter a value at "Err Val(Low)" and "Warn(Low)" section.
  However, an error occurs when low limit error value < low limit warning value is not set.
  High/Low limit value range check
  Enter a value at "Err Val(Low)", "Warn(Low)", "Warn(High)" and "Err Val(High)" section.
  However, an error occurs when low limit error value < low limit warning value < high limit warning value < high limit error value is not set.
- For warning value and error value, only either of high or low value can be set.

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[Operation Procedure]

When adding an analysis name

1. Click [Setting] in "Operation analysis" dialog box.
2. Click [Create new] in "Analysis setting" dialog box.
3. As "Create new Analysis name" dialog box appears, enter a new analysis name and click [OK].
4. Make the settings in << Analysis selection>> and << Analysis condition setting>>.
5. Click [Resister] to add the analysis name.

When changing the settings of an analysis name

1. Click [Setting] in "Operation analysis" dialog box.
2. Select the analysis name of which settings to be changed at "Analysis name" section.
3. As the corresponding settings are displayed, change the settings.
4. After the change is completed, click [Resister] to ensure the changed settings.

When deleting an analysis name

1. Click [Setting] in "Operation analysis" dialog box.
2. Select the analysis name of which settings to be changed at "Analysis name" section.
3. Click [Delete]. As the corresponding confirmation dialog box appears, click [Yes]. The analysis name is deleted.

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9.9 PLC Diagnostics

[Purpose]

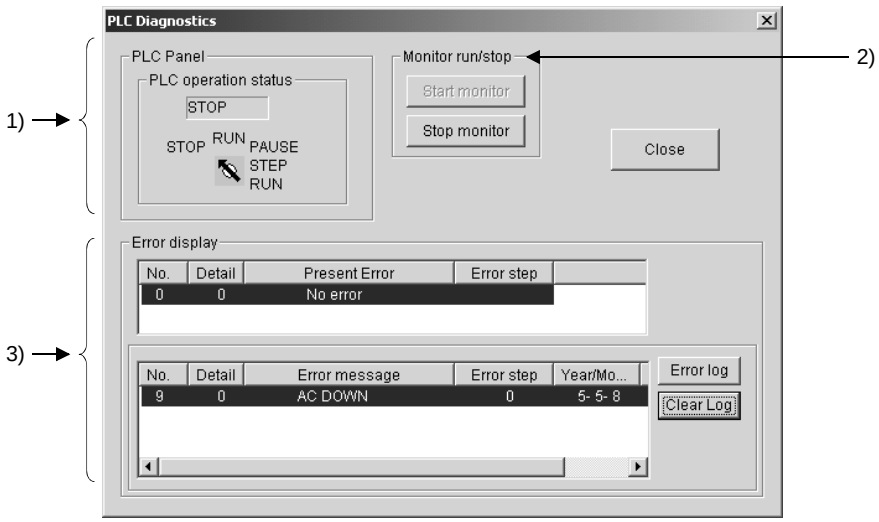
Use the function when confirming the PLC CPU status.
The target PLC CPU settings and operation status and error status are displayed.

[Operation Procedure]

[Diagnostics] → [PLC diagnostics] → Target name specification (In the case PLC diagnostics is started when PLC CPU is not selected in the PLC side window)

[Setting Screen]

ACPU



[Setting Item]

1) PLC panel

Operation status of the PLC CPU specified as the target name is displayed.

2) Monitor run/stop

Start monitor button: Click the button to start the communication with the PLC CPU and update the display.

Stop monitor button: Click the button to stop the communication with the PLC CPU and hold the display.

3) Error display

Upper area: Present error is displayed.

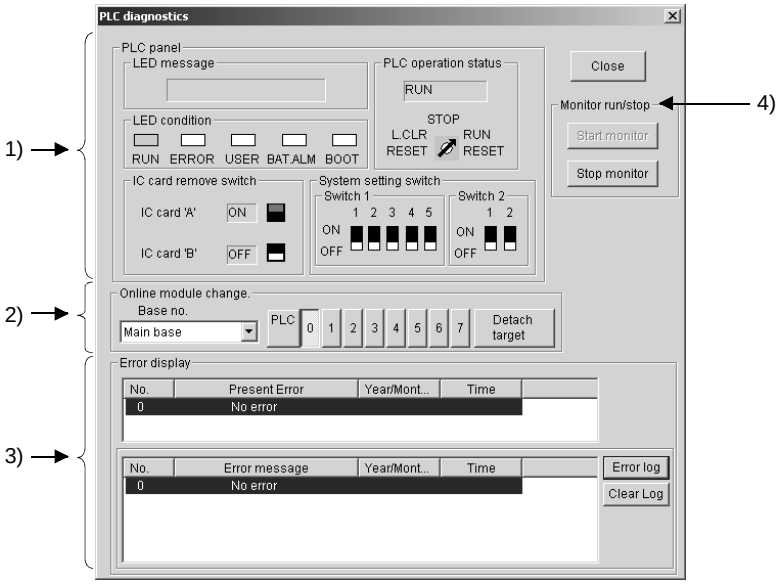
Lower area: Error history is displayed. "No." indicates the error code, "Detail" indicates the detail error code.

Error log button: Up to 16 latest error records are displayed by clicking the button.

Clear log button: Click the button to clear the error history.

[Setting Screen]

QnACPU



[Setting Item]

1) PLC panel

Operation status of the PLC CPU specified as the target name is displayed.
When the Q2AS(H)/Q2AS(H)S1CPU is diagnosed, the positions of Switches 1 and 2 are displayed on GX Explorer as indicated below.

Switch 1 of PLC CPU	—	Switch 1 of GX Explorer
1 is set to ON	→	5 is displayed ON
2 is set to ON	→	4 is displayed ON
3 is set to ON	→	3 is displayed ON
4 is set to ON	→	2 is displayed ON
5 is set to ON	→	1 is displayed ON

Switch 2 of PLC CPU	—	Switch 2 of GX Explorer
1 is set to ON	→	2 is displayed ON
2 is set to ON	→	1 is displayed ON

2) Online module change

When performing online module change, set the destination base No. and slot No., and then click Detach target.

For QCPU (Q mode), the item is masked.

3) Error display

Upper area: Present error is displayed.
Lower area: Error history is displayed. "No." indicates the error code.
Error log button: Up to 16 latest error records are displayed by clicking the button.
Clear log button: Click the button to clear the error history.

4) Monitor run/stop

Start monitor button: Click the button to start the communication with the PLC CPU and update the display.

Stop monitor button: Click the button to stop the communication with the PLC CPU and hold the display.

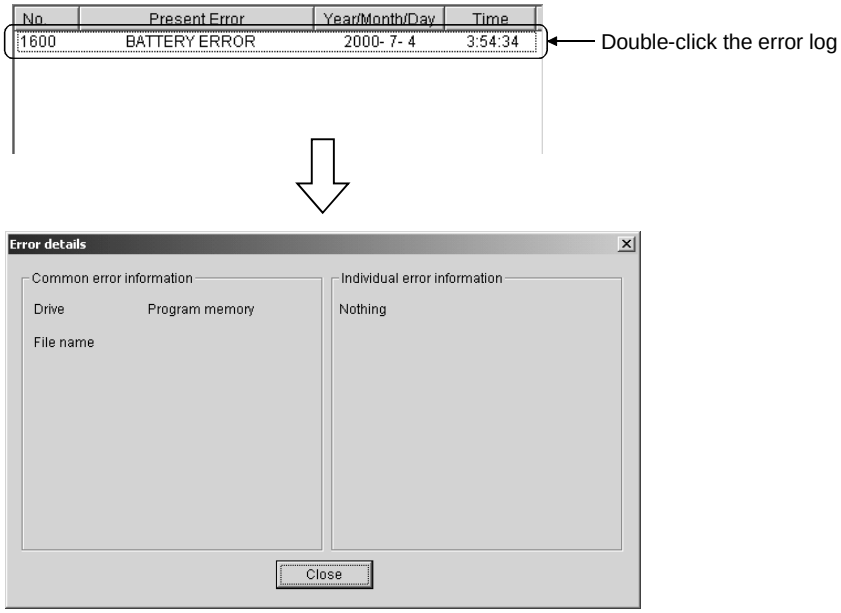
[Setting Procedure]

The following explains the procedure of online module change.

1. Set the destination base No. and slot No., and then click Detach target. "Online module change" dialog box appears.
2. Mount or remove the module at the specified slot of the specified base.
3. After completing mounting/removal of the module, click the End substitution button in the RUN module mount/remove dialog box.

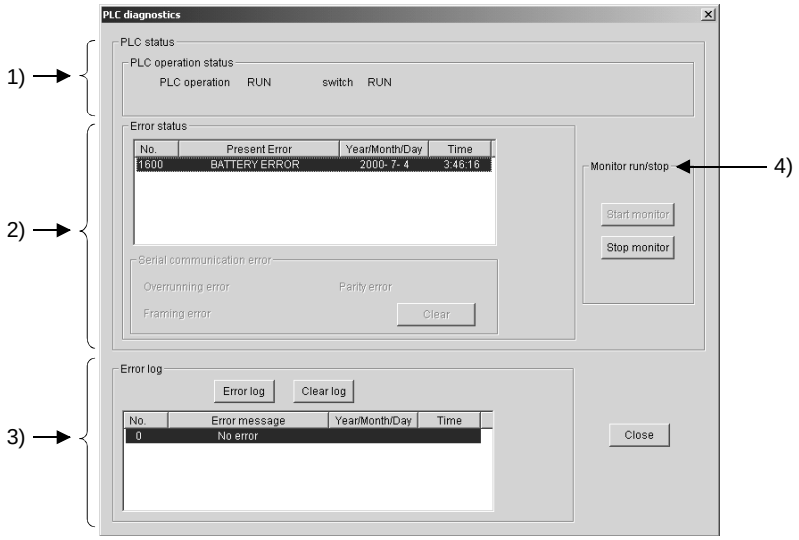
POINT

- By Selecting and double-clicking an error at "Error display" section (upper or lower area), SD5 to 15 (Common error information) and SD16 to 26 (Individual error information) details of PLC CPU are displayed in "Error details" dialog box. The dialog box is available for QCPU (Q mode)/QnACPU only.



[Setting Screen]

QCPU (Q mode)



[Setting Item]

1) PLC operation status

Operation status of the PLC CPU specified as the target name is displayed.
In the case of multiple CPU system, "Empty" may be displayed when empty CPU No. has been specified.

2) Present error

Present error is displayed.
Serial communication error (Q00/Q01CPU only)
To be monitored when the serial communication function has been set.
Clicking the Clear button displays the following dialog box.

Click the Yes button to clear the error.

3) Error history

Error log button: Click the button to display the latest error records in the lower area.

Clear log button: Click the button to clear the error records currently displayed.

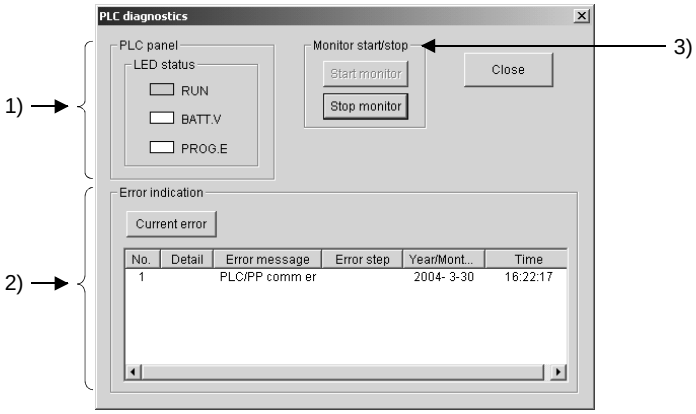
4) Monitor run/stop

Start monitor button: Click the button to start the communication with the PLC CPU and update the display.

Stop monitor button: Click the button to stop the communication with the PLC CPU and hold the display.

[Setting Screen]

FXCPU



[Setting Item]

1) PLC panel

Operation status of the connected PLC CPU is displayed.

RUN: Lit in green when the PLC CPU is in the RUN status.

BATT.V: Lit in red when the voltage of the battery for memory back up has dropped.

PROG.E: Lit in red when an error has occurred (when one of the following is ON: M8061, M8064, M8065, M8066).

2) Error indication

Current error is displayed.

Current error button: Click the button to display the error that has occurred in the PLC CPU.
The date and time when Current error is clicked are shown: they do not show the time when an error occurs.

3) Monitor start/stop

Start monitor button: Click the button to start the communication with the PLC CPU and update the display.

Stop monitor button: Click the button to stop the communication with the PLC CPU and hold the display.

9.10 Network Diagnostics

9.10.1 Network diagnostics

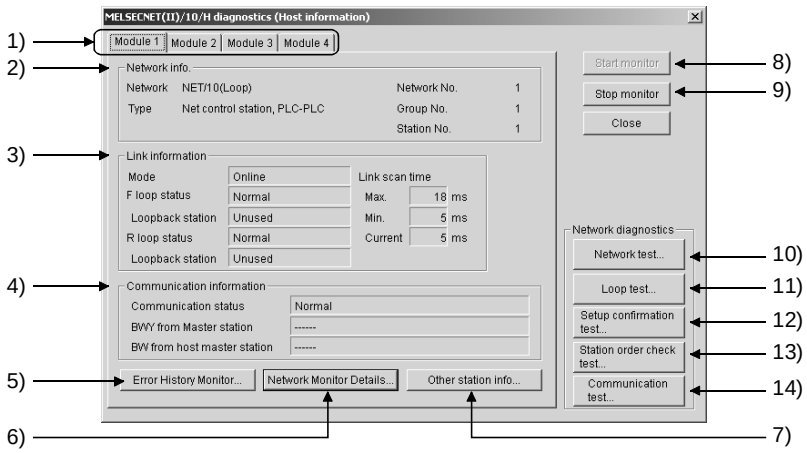
[Purpose]

Display the network error statuses (in MELSECNET (II), MELSECNET/10 and MELSECNET/H) and network test results and check the network operation status.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Target name specification (When "Network diagnostics" is started with no PLC CPU selected in the PLC side window.)

[Setting Screen]



[Setting Item]

1) Link module selection tabs

Switch among network diagnosis result displays for the first to fourth link modules.
The existence of link modules is to be identified by the actual mounting status.

2) Network info.

Indicates the network information of the host station set in target name.
With MELSECNET (II), the network No. and group No. are not displayed.

3) Link information

Indicates the network status.

4) Communication information

Indicates the communication status of the applicable network.
For MELSECNET/10, MELSECNET/H only the communication status is indicated.

5) Error History Monitor button

Click the button to display the error history of MELSECNET/10 and MELSECNET/H.
Refer to Section 9.10.1 (1) for details.

6) Network Monitor Details button

Click the button to display the network connection status of MELSECNET/10 and MELSECNET/H.
Refer to Section 9.10.1 (2) for details.

7) Other station info. button

Click the button to monitor other stations connected to MELSECNET/(II), MELSECNET/10, MELSECNET/H.
Refer to Section 9.10.1 (3) for details.

8) Start monitor button

Click the button to execute the network diagnostics.
The indication is updated during monitoring.

9) Stop monitor button

Click the button to stop the network diagnostics.
The indication is retained during monitoring stop.

10) Network test button

Click the button to start or stop the link operation to a host station, a specified station or all stations on MELSECNET/10, MELSECNET/H.
Refer to Section 9.10.1 (4) for details.

11) Loop test button

Click the button to confirm the loop status of MELSECNET/10, MELSECNET/H.
Refer to Section 9.10.1 (5) for details.

12) Setup confirmation test button

Click the button to confirm the status of station No., network No. and group No. set to each station.
Refer to Section 9.10.1 (6) for details.

13) Station order check test button

Click the button to check the station order of the forward/reverse loop on MELSECNET/10, MELSECNET/H.
Refer to Section 9.10.1 (7) for details.

14) Communication test button

Click the button to execute the communication test between networks on MELSECNET/10, MELSECNET/H.
Refer to Section 9.10.1 (8) for details.

POINT

- The number of link modules that can be mounted for each network type is:
  MELSECNET (II) 2
  MELSECNET/10, MELSECNET/H 4
- The target of network diagnosis is the network connected from the host station. To change the network target, change the target name.
- About host station information and other station information:
  When the routing is through E71, an AnUCPU executes monitoring equivalent to that of an AnACPU, which means that MELSECNET (II) information can be monitored.
  However, for MELSECNET/10, MELSECNET/H modules, monitoring is not allowed.
  If the PLC CPU connected is in other station, the network monitoring is available for both the host station and other stations.

9.10.1 (1) Error history monitor

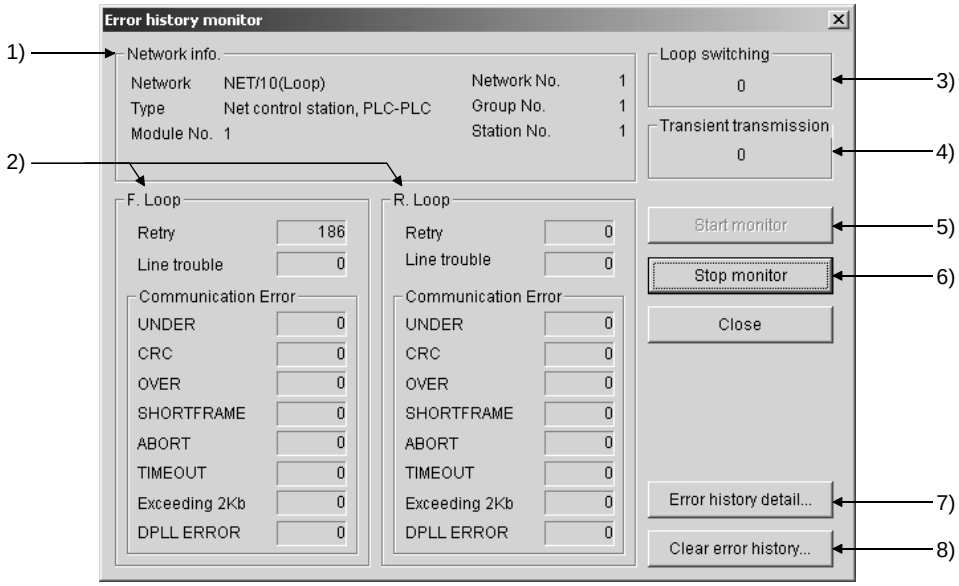
[Purpose]

Shows the error history of the MELSECNET/10, MELSECNET/H.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Error History Monitor button

[Setting Screen]



[Setting Item]

1) Network Info.

Shows each information of the network.

2) Loop switching

Shows the number of loop switchings.

3) Transient transmission

Shows the number of transient transmission errors.

4) F Loop/R Loop

Shows each item for monitoring execution.

5) Start monitor button

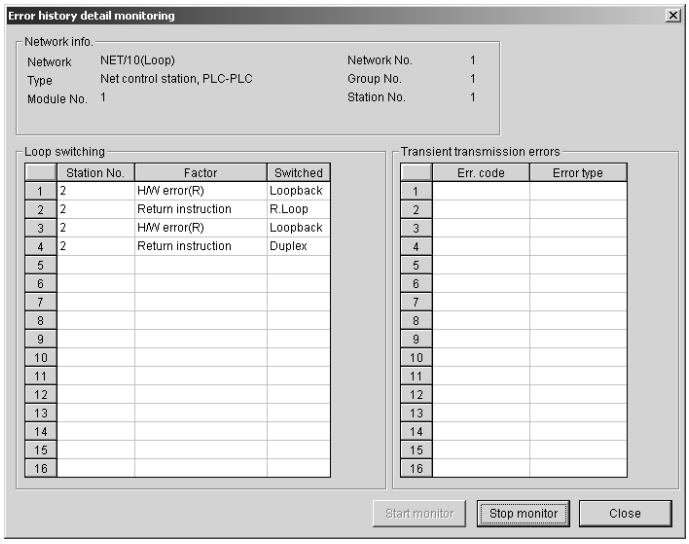
Click the button to execute the error history monitoring.

6) Stop monitor button

Click the button to stop the error history monitoring.

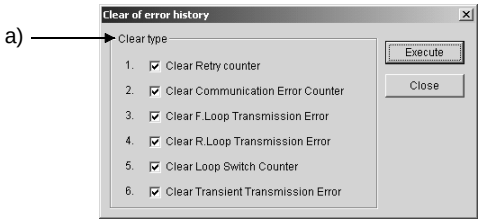
7) Error history details button

Click the button to display "Error history detail monitoring" dialog box. Shows the details of Number of Loop Conversions and Peer to Peer Transmission Error.



8) Clear of error history button

Click the button to display "Clear of error history" dialog box.



[Setting Item]

a) Clear type

Choose any item to be cleared.

9.10.1 (2) Network monitor details

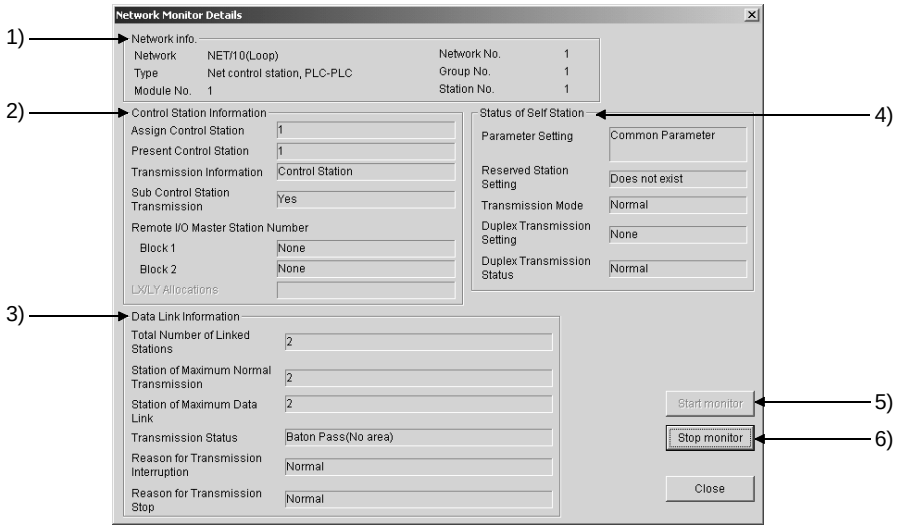
[Purpose]

Display the network line status of the MELSECNET/10, MELSECNET/H.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Network Monitor Details button

[Setting Screen]



[Setting Item]

1) Network info.

Shows each information of the network.

2) Control Station Information

Shows each information of the control station.

Remote I/O master station appears only for the PLC-to-PLC network.

LX/LY assignment appears only for the remote I/O network.

3) Data Link Information

Shows each information of data link.

4) Status of Self Station

Shows each status of its own station.

Parameter setting appears only for the PLC-to-PLC network.

5) Start monitor button

Click the button to execute the network monitoring.

6) Stop monitor button

Click the button to stop the network monitoring.

9.10.1 (3) Other station information

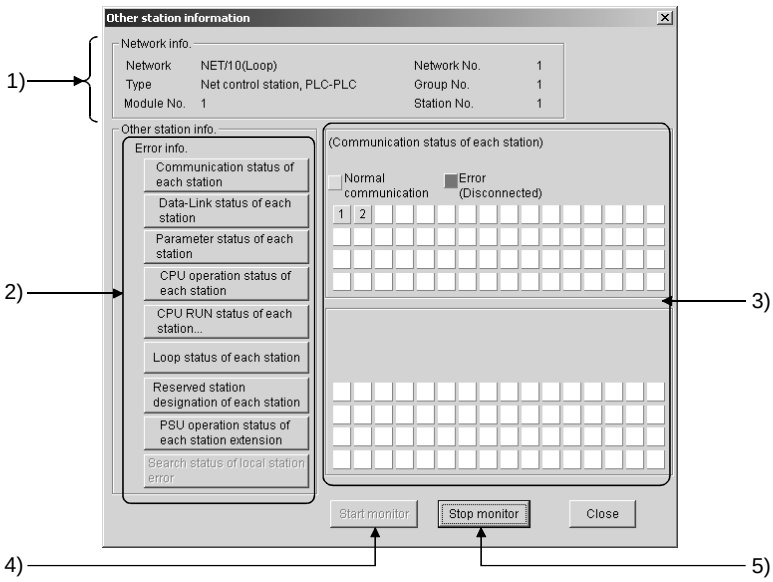
[Purpose]

Monitor other stations connected to MELSECNET(II), MELSECNET/10, MELSECNET/H.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Other station info. button

[Setting Screen]



[Setting Item]

1) Network info.

Indicates the network information of the other station specified as the target name.

2) Error info.

"ERR" will appear in the error information display field when a faulty station, STOP station, reserved station and station supplied with external power are detected for the corresponding items.

"RSV" will appear in the error information display field when a reserved station is specified.

Choose the corresponding item buttons to display their details in 3).

3) Detailed error information display field

When a station information item is selected, indicates the station status relevant to that item.

4) Start monitor button

Starts monitoring if it is stopped.

5) Stop monitor button

Stop monitoring that is in progress.

• The following list shows whether each item can be selected or not in "Other station information" (ACPU).

		MELSECNET/10						MELSECNET(II)	
		MELSECNET/10				MELSECNET(II)		—	
		Control Station		Normal Station		Master Station		Master	Local
		Loop	Bus	Loop	Bus	Loop	Bus	—	—
1	Communication status for each station	○	○	○	○	○	○	○	×
2	Data link status for each station	○	○	○	○	○	○	×	×
3	Parameter status for each station	○	○	×	×	○	○	○	×
4	CPU operating state for each station	○	○	○	○	×	×	×	×
5	CPU RUN state for each station	○	○	○	○	×	×	○	○
6	Loop status for each station	○	×	○	×	○	×	○	×
7	Reserve station designation for each station	○	○	○	○	○	○	×	×
8	External power supply operation status for each station	×	×	×	×	×	×	×	×
9	Local station error detection status	×	×	×	×	×	×	○	×

○: Can be selected ×: Cannot be selected (mask display)

• The following list shows whether each item can be selected or not in "Other station information" (Q/QnACPU).

		MELSECNET/10, MELSECNET/H				MELSECNET(II)		MELSECNET(II)	
		MELSECNET/10, MELSECNET/H				MELSECNET(II)		—	
		Control Station		Normal Station		Master Station		Master	Local
		Loop	Bus	Loop	Bus	Loop	Bus	—	—
1	Communication status for each station	○	○	○	○	○	○	○	×
2	Data link status for each station	○	○	○	○	○	○	×	×
3	Parameter status for each station	○	○	×	×	○	○	○	×
4	CPU operating state for each station	○	○	○	○	×	×	×	×
5	CPU RUN state for each station	○	○	○	○	×	×	○	○
6	Loop status for each station	○	×	○	×	○	×	○	×
7	Reserve station designation for each station	○	○	○	○	○	○	×	×
8	External power supply operation status for each station	○	×	○	×	○	×	×	×
9	Local station error detection status	×	×	×	×	×	×	○	×

○: Can be selected ×: Cannot be selected (mask display)

9.10.1 (4) Network test

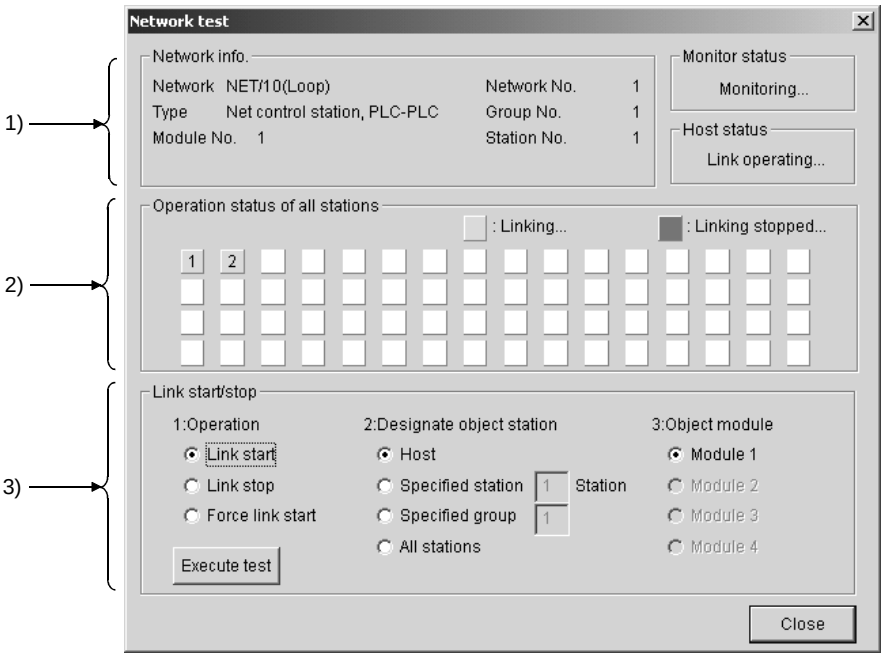
[Purpose]

Start or stop the link operation to the host station, specified station or all stations on the MELSECNET/10, MELSECNET/H.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Network test button

[Setting Screen]



[Setting Item]

1) Network info.

Indicates the network information of the host station designated in the target name.

2) Operation status of all stations

Indicates the link status of the modules for which the test is executed.

3) Link start/stop

The order of priority for link start/stop is as follows:
Link start < Link stop < Forced link start
Clicking Execute test executes preset operation.

POINT

Link start

- Starting a stopped station is available from the host station although it is not available from any other stations.

Link stop

- Stations can be stopped from the host station or other stations.

Forced link start

- Stopped stations can be started regardless of whether they are in the host or other station. However, forced start is not available for each station when all stations are stopped.
- Forced start is not available when the target PLC CPU is in any other station.
- Whether or not execution is possible at a personal computer can be checked by monitoring SB and SW; whether execution has been started/stopped at the host station can be checked by monitoring SW0000 to SW0004 and SB0000 to SB0003.
- Forced start is executable if the target PLC CPU is routed through C24, UC24 or QC24.
- Execution is not possible when using a MELSECNET (II)/MELSECNET/10 board.
- Execution is not possible with routing through E71/QE71.

9.10.1 (5) Loop test

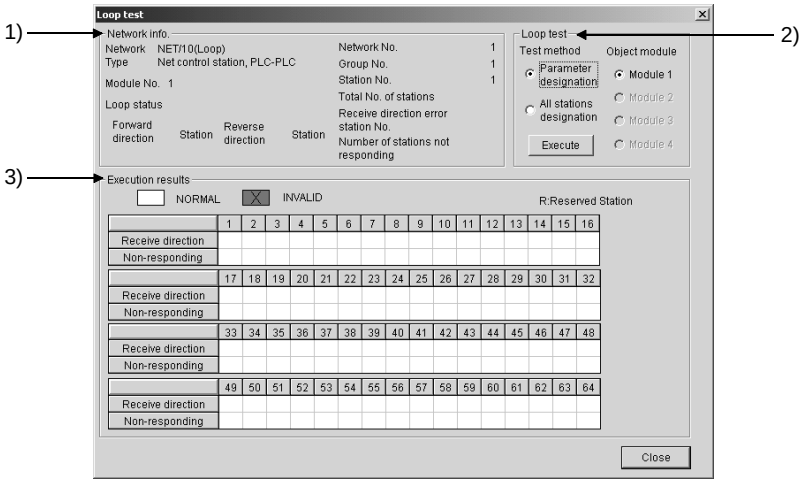
[Purpose]

Check the status of the MELSECNET/10, MELSECNET/H loop.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Loop test button

[Setting Screen]



[Setting Item]

1) Network info.

Shows own station's network information set in Target name.

2) Loop test

Set the test method and target module, and click the Execute button to start a loop test.

A loop test with any of remote station connected may be conducted only on the connected remote I/O network.

A change in target module will result in an error.

• Test method

Parameter designation: Tests the parameter-set stations (except for reserved stations).
When there are no parameter settings, all stations will be tested.

All stations designation: Tests all stations.

• Object module

Choose the module on which a loop test will be conducted.
The default is the module selected in network monitor (host station).

3) Execution results

Shows the number of stations and results (normal/invalid, reserved stations: R).

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9.10.1 (6) Setup confirmation test

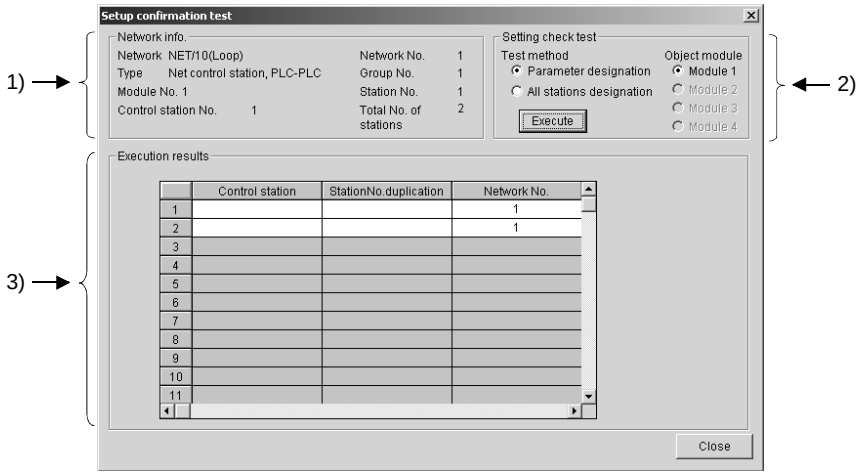
[Purpose]

Check the status of the following settings made for each station: station No., network No., group No..

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Setup confirmation test button

[Setting Screen]



[Setting Item]

1) Network info.

Indicates the network information of an other station designated at the target name.

2) Setting check test

Set the test method and the object module and click Execute to perform the setup confirmation test.

• Test method

Parameter designation: All the stations set in the parameters, with the exception of reserve stations, are subject to the setup confirmation test.
If no network settings have been set (default), all stations are subject to the test.

All stations designation: All stations are subject to the setup confirmation test.
The number of stations is not spcified.

• Object module

The module selected for the network monitor (host station) is set as the default.
If there is no MELSECNET/10, MELSECNET/H module, an error occurs.

3) Execution results

Item No.: Indicates number of stations for which the setup confirmation test has been performed.
Up to 64 stations can be displayed.

Control station:
If control station setting has been made at two or more locations, "×" is displayed.

Station No. duplication:
If the same station No. has been set at two or more locations, "×" is displayed.

Network No.: Displays network No. of the station for which the setup confirmation test has been conducted.
Network No. different from that of the host station is displayed in red.

Group No.: Indicates the group number of the station where the setup confirmation test has been carried out.
In the case of a remote I/O network, the indication for stations with errors is blank.

Reserve station:
"×" is displayed for stations set as reserve stations in the parameter settings.
(Where "Parameter designation" has been set as the test execution designation.)

Error station: If a station is reserved in the parameter settings, or a module in all station designation is faulty, "×" is displayed.

Network type error (QnACPU only):
"×" is displayed for stations whose parameter setting and actual connection type do not match.

Duplex R sub M station (QnACPU only):
"×" is displayed for stations having more than one submaster station on the same network.

Parallel R sub M station (QnACPU only):
"×" is displayed for stations having more than one submaster station on the same network.

POINT

- The test cannot be executed at more than one station at the same time.
- Note that cyclic transmission is stopped while the test is being executed.

9.10.1 (7) Station order check test

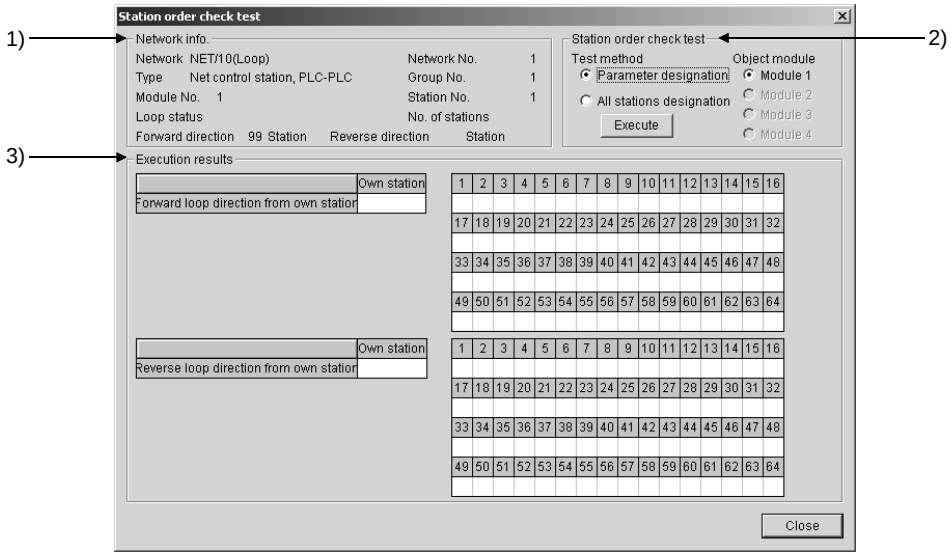
[Purpose]

Confirm the station order in the forward/reverse loops of a MELSECNET/10, MELSECNET/H system.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Station order check test button

[Setting Screen]


1)
2)
3)
Station order check test
Network info.
Network NET/10(Loop)
Network No. 1
Type Net control station, PLC-PLC
Group No. 1
Module No. 1
Station No. 1
Loop status
No. of stations
Forward direction 99 Station
Reverse direction Station
Station order check test
Test method
Object module
Parameter designation
All stations designation
Module 1
Module 2
Module 3
Module 4
Execute
Execution results
Own station
Forward loop direction from own station
Own station
Reverse loop direction from own station
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32
33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64
Close

[Setting Item]

1) Network info.

Indicates the network information of an other station designated at the target name.
For the loop status, the forward/reverse loop / forward loop / reverse loop / loopback status is indicated.
The number of stations indicates how many stations have been cheched including reserve stations in the test.

2) Station order check test

Set the test method and the object module and click Execute to perform the loop test.

• Test method

Parameter designation: Stations set in the parameters, with the exception of reserve stations, are subject to the test.
If the network parameters have not been set (default), all stations are subject to the test.

All stations designation: All stations are subject to the station order check test.
The number of stations is not specified.

• Object module

The module selected for the network monitor (host station) is set as the default.
If there is no MELSECNET/10, MELSECNET/H module, an error occurs.

3) Execution results

The order of stations in the forward and reverse loop directions, starting from the host station, is indicated.

For loopback, only the order in the forward loop direction from the host station is indicated.

The station numbers of reserve stations are not indicated.

POINT

- The test cannot be executed at more than one station at the same time.
- Note that cyclic transmission is stopped while the test is being executed.

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9.10.1 (8) Communication test

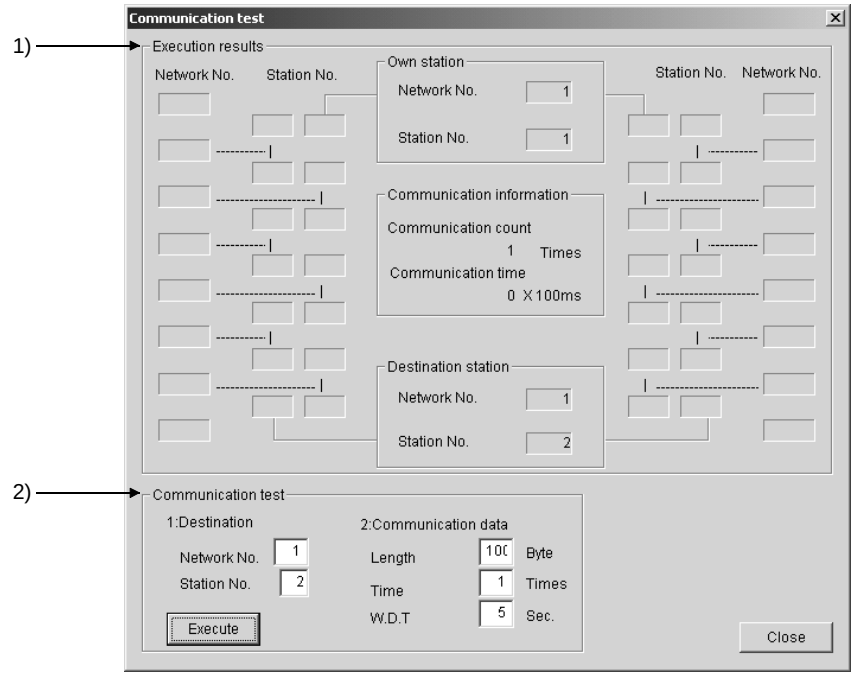
[Purpose]

Conduct a communication test between networks on the MELSECNET/10 or H.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Network diagnostics] → Communication test button

[Setting Screen]



[Setting Item]

1) Execution results

Shows the communication test results between the networks.

2) Communication test

Set Destination, Communication data and Target module, and click Execute to start a communication test.

A change in target module will result in an error.

Destination: Set the network No. (1 to 255 for ACPU, 1 to 239 for Q/QnACPU) and station number (1 to 64).

Communication data: Set the data length (1 to 900 bytes), number of transmission (1 to 100 times) and transmission monitoring time (1 to 100 seconds).

9.10.2 CC-Link / CC-Link/LT diagnostics

CC-Link, CC-Link/LT diagnostics monitor the network information of each station and diagnose and test the network status.

The diagnostics can be run by connecting to the PLC CPU directly.

POINT

- When the target CC-Link system is configured with QCPU(s) (Q mode), the QJ61BT11 only is diagnosed.
- When the target CC-Link/LT system is configured with QCPU(s) (Q mode), the QJ61CL12 only is diagnosed.
- When the target for diagnostics is a QCPU (A mode), use the AJ61BT11 or A1SJ61BT11.
- When refresh parameters have been created in a sequence program for the ACPU, Data link start and Loop test for a temporarily error invalid station (other station) are disabled.

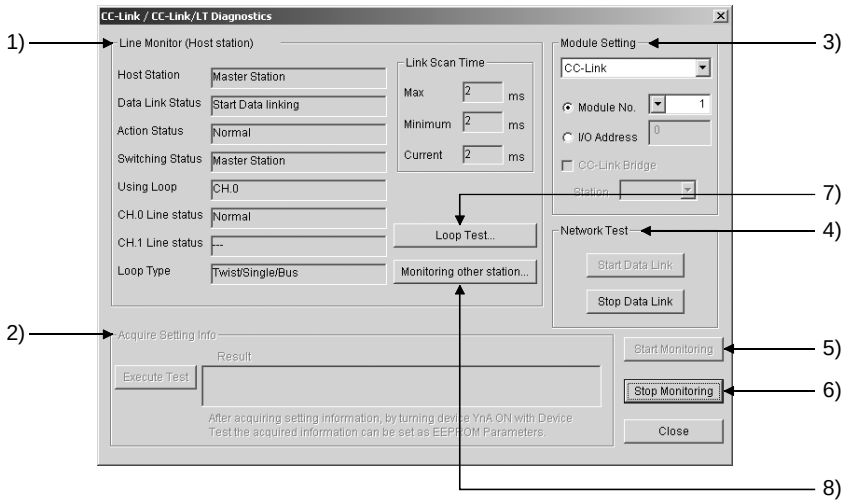
[Purpose]

By displaying the error status or test results of the network (CC-Link) of the target CPU, confirm the network operation status.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [CC-Link diagnostics] →
Target name specification (When starting the CC-Link/LT diagnostics without selecting the PLC CPU in the PLC CPU side window)

[Setting Screen]



[Setting Item]

1) Host station info.

Displays the host station status (special M (SB) and special D (SW) contents).

2) Acquire the setting info. (Q/QnACPU only)

Executing this item sets the CC-Link system status set to the work area of the CC-Link module.

3) Module Setting (QCPU (Q mode only)

Select the CC-Link or CC-Link/LT to be monitored.

Module No.: The setting is valid for the CC-Link. Specify the module to be monitored.

I/O Address: Specify the I/O address of the master module to be monitored.

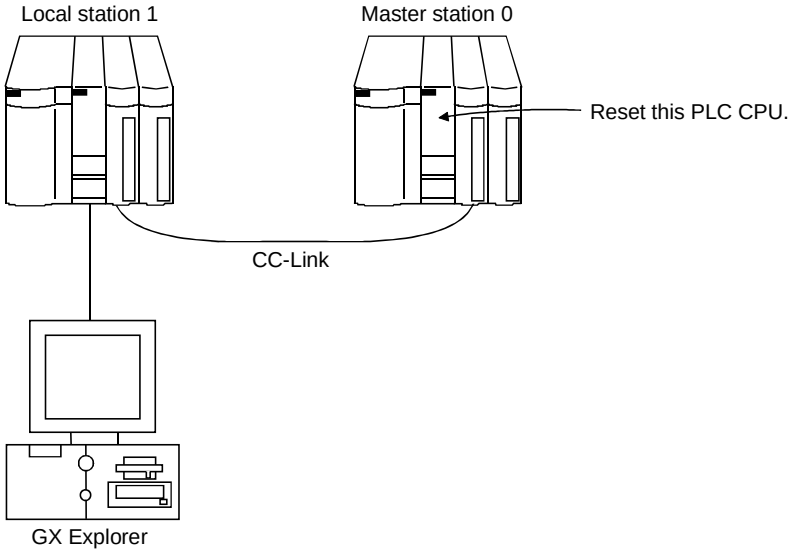
CC-Link Bridge: This setting is required to diagnose a CC-Link bridge module. Since it is not possible if "CC-Link/LT" is selected, select "CC-Link".
Monitoring a CC-Link bridge module cannot be started during CC-Link monitoring. Stop the CC-link monitoring before starting it.

4) Network test (Not allowed when MELSECNET/H remote station is installed)

Data link is started or stopped for the CC-Link module (all station specified) set in "Module Setting".

IMPOTANT

In the following system configuration, executing "data link stop" to the master station disables communications from GX Explorer.
To make a data link start or resume communications from GX Explorer, the PLC CPU on the data link stopped station must be reset.



5) Start monitoring button

Click the button to start the host station monitoring.

6) Stop monitoring button

Click the button to stop the host station monitoring.

7) Loop Test button

Click the button to test all or specified station(s).
Refer to Section 9.10.2 (1) for details.

8) Monitoring other station button

Click the button to monitor the other station lines of CC-Link connected to the PLC CPU.
Refer to Section 9.10.2 (2) for details.

POINT

- "Module No." in Module Setting
  When the QnA/ACPU of function version A is used or the CC-Link/LT is specified, this setting is not available. Make setting with the I/O address.
- Do not perform the loop test at the same time with a loop test conducted by a sequence program.
  Doing so may cause the loop test to be performed improperly.

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9.10.2 (1) Conducting a line test

[Purpose]

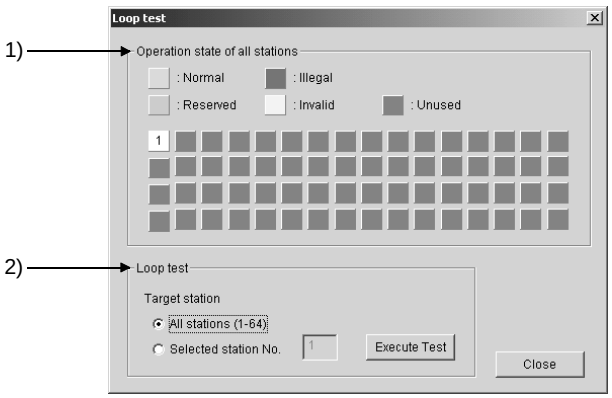
Test all stations or the specified station.

Valid only when the master station has been specified as a target.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [CC-Link diagnostics] → Loop test button

[Setting Screen]



[Setting Item]

1) Operation state of all stations

Monitors the operating statuses of all stations connected to the specified master module.

Light blue: Normal, Red: Illegal, Green: Reserved, Yellow: Invalid, Gray: Unused

2) Loop test

A loop test is made by specifying the host station or other station (station number).

Clicking Execute Test performs the test.

All stations: Test will be run on all 64 stations.

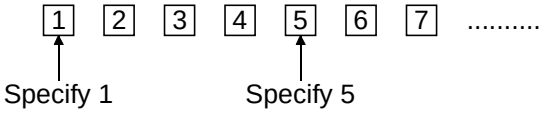
Selected station No.: Test will be conducted on the specified stations.

Specify the first one of the occupied stations.

Setting is not allowed for the CC-Link/LT.

<Example>

• When there are 4 and 2 occupied stations connected



Specifying 2,3,4 or 6 will result in a faulty station.

POINT

Do not perform the loop test at the same time with a loop test conducted by a sequence program.

Doing so may cause the loop test to be performed improperly.

9.10.2 (2) Other station monitor

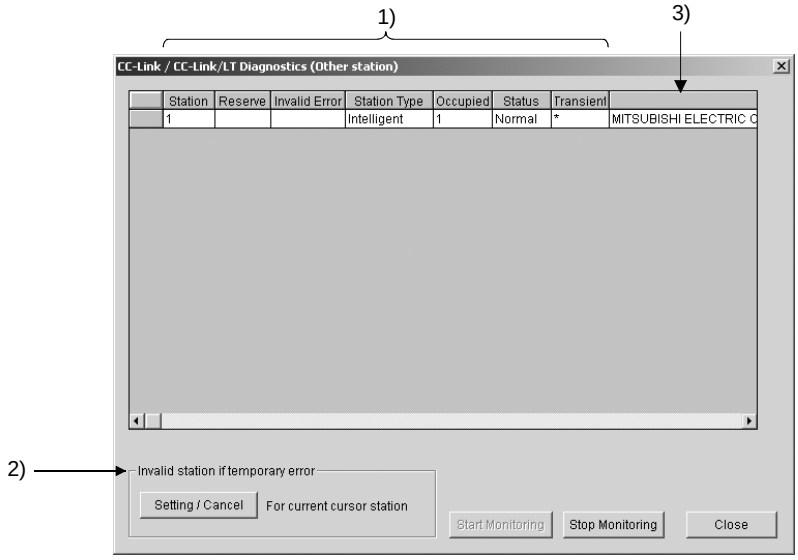
[Purpose]

Monitor the other station lines of CC-Link connected to the PLC CPU.
Can be executed only during data link.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [CC-Link diagnostics] → Monitoring other station button

[Setting Screen]



[Setting Item]

1) Other station information

Displays the other station information.
If the host is a local station, this monitor monitors the actual CC-Link mounting status and therefore the stations set as reserved stations are not displayed.
If the CC-Link/LT has been selected, the reserve setting, error invalid setting, transient error, company name and temporary error invalid station setting are masked.

2) Invalid station if temporary error (Setting not allowed when MELSECNET/H remote station is installed)

A module is changed without the corresponding remote station being error-detected while it is online.

The temporary error invalidation setting must be made by specifying the first station number.
Therefore, when there is no parameter setting, the status and transient error information is shown on the assumption that one station occupies 32 points.
To enable this setting, select a desired station No. by the cursor.
(The invalidation setting is ignored if it is made for the station which is not in the first position of actual assignment.)

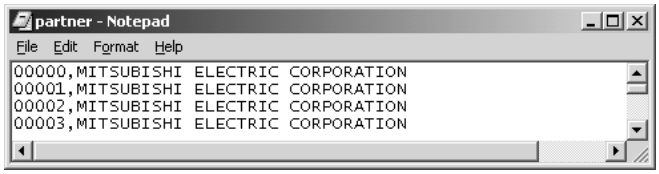
3) Maker code

- The maker name or maker code of the equipment connected by CC-Link is displayed.
- The maker code appears if the maker name is not entered in the maker code list.
- The remote I/O is displayed blank since it does not have a maker name and a maker code.
- The maker code list (PARTNER.DAT) is saved in the installation destination of GX Explorer and can be edited using a text editer or like available on the market.
  Note that some maker codes may not be published for reasons of the partner makers.
  When editing the file on the user side, follow the specifications of the following file format.

	Maker Code	Company Name
		English version
Max. number of characters	5 characters	255 characters
Usable characters*1	0 to 9	• Alphanumeric • Symbol
Remarks	Maker code not in 5 digits is ignored.	The display varies with the screen width. Up to about 75 characters in small font are displayed, but not more than that.

*1: Any company name including , should be enclosed by "".
Example: "###### Co., Ltd."

The following is an example of displaying PARTNER.DAT using a text editor.



The following message appears if the maker code list does not exist in the installation destination of GX Explorer or has been damaged.

MELSOFT Series GX Explorer
Error in reading the Partner Maker data file.
There is a possibility that the file has been damaged. Please reinstall.
OK

POINT

Do not make a sequence program-based temporary error disabled station setting at the same time.
If performed at the same time, the temporary error disabled station setting may not be performed properly.

9.10.3 Ethernet diagnostics

Various setting statuses of the Ethernet module can be checked by this diagnostics.

[Purpose]

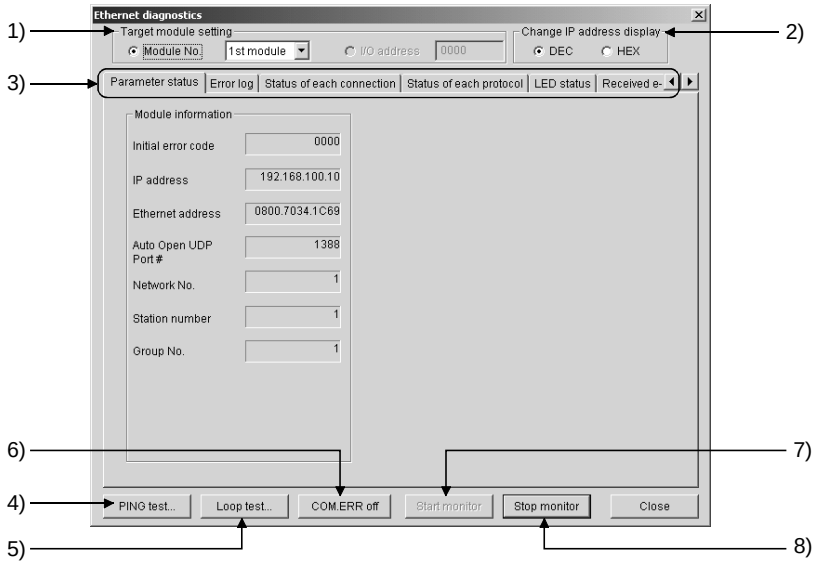
Check the parameter status, error log, each connection status, status of each protocol, LED status and received or sent e-mail information.
For details, refer to the sections which explain the error codes and buffer memory in the following manuals.

- Q Corresponding Ethernet Interface Module User's Manual (Fundamentals)
- QnA Corresponding Ethernet Interface Module User's Manual (Details)
- A Corresponding Ethernet Interface Module User's Manual (Details)

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics]

[Setting Screen]



[Setting Item]

1) Target module setting

Specify the Ethernet module to be monitored.
The setting range is 1st to 4th module.
When the A/QnACPU module of function version A is used, Setting is not available. Set the I/O address.

2) Change IP address display

Change the IP address indication between decimal and hexadecimal.

3) Selection of information monitor

Various information on the Ethernet module can be monitored.

4) PING test button

Used to perform a PING test to the external device.
Refer to Section 9.10.3 (8).

5) Loop test button

Used to perform a loopback test on the network.
Refer to Section 9.10.3 (9).

6) COM.ERR off button

Click this button to extinguish the [COM ERR] LED.

7) Start monitor button

Click this button to start Ethernet diagnostics.
The display is updated during monitoring.

8) Stop monitor button

Click this button to stop Ethernet diagnostics.
The display is held during monitoring stop.

9.10.3 (1) Ethernet diagnostics <Parameter status>

[Purpose]

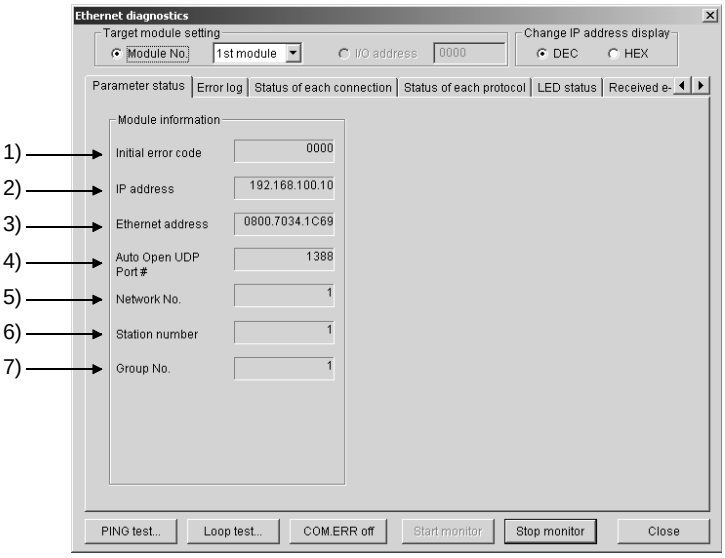
Monitors the parameters status of the Ethernet module.

[Operation Procedure]

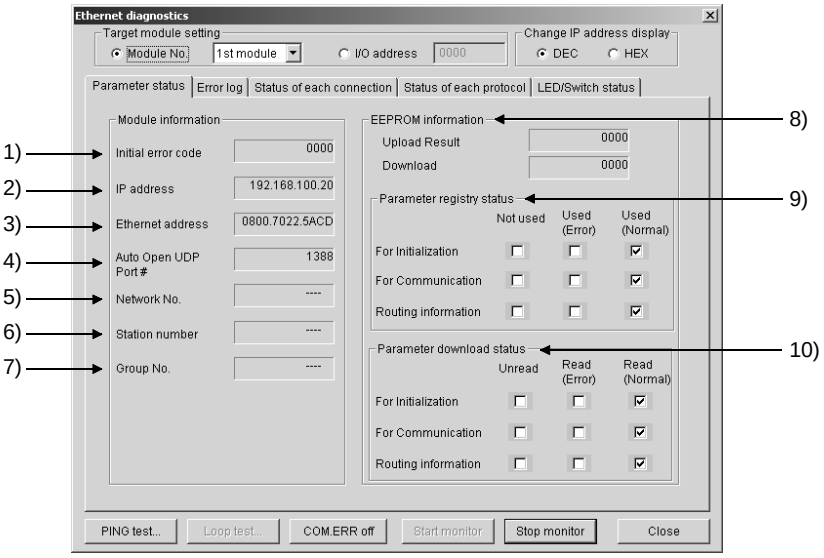
[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → <<Parameter status>>

[Setting Screen]

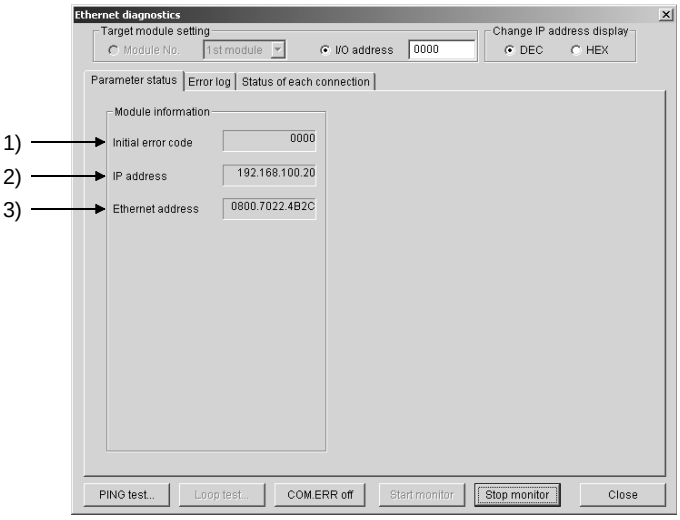
In the case of QCPU



In the case of QnACPU



In the case of ACPU



[Setting Item]

1) Initial error code

Displays the initial error code.

2) IP address

Displays the host station IP address.

3) Ethernet address

Displays the host station Ethernet address.

4) Auto Open UDP Port #

Displays the automatic OPEN UDP port number.

5) Network No.

Displays the target-module-specified network number.

6) Station number

Displays the target-module-specified station number.

7) Group No.

Displays the target-module-specified group number.

8) EEPROM information

0000 appears when normal.

An error code appears when an error occurs.

Refer to the manual of the corresponding model and take corrective action.

9) Parameter registry status

Displays the preset parameter status.

10) Parameter download status

Displays the preset parameter status.

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9.10.3 (2) Ethernet diagnostics <Error log>

[Purpose]

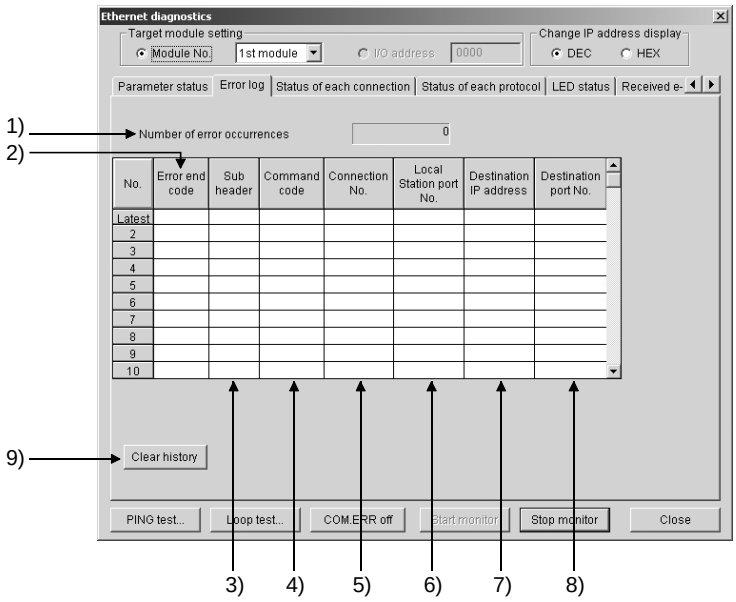
Monitors the error log area of the Ethernet module.

[Operation Procedure]

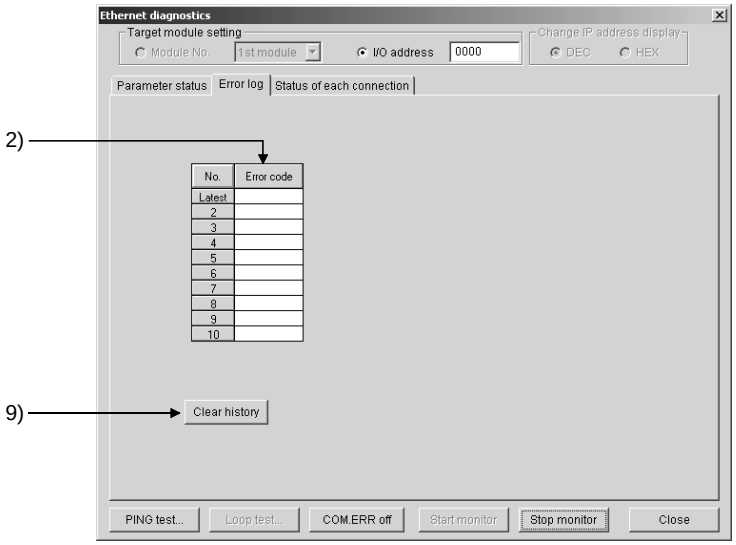
[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → <<Error log>>

[Setting Screen]

In the case of Q/QnACPU



In the case of ACPU



[Setting Item]

1) Number of error occurrences

Displays the number of error occurrences.

2) Error end code

Displays the error/end code.

Displays only the error code for the ACPU.

3) Sub header

Displays the sub header.

4) Command code

Displays the command code.

5) Connection No.

Displays the connection number.

6) Local Station port No.

Displays the host station port number.

7) Destination IP address

Displays the IP address on the other end of communication.

8) Destination port No.

Displays the port number on the other end of communication.

9) Clear history button

Clears the error history.

9.10.3 (3) Ethernet diagnostics <Status of each connection>

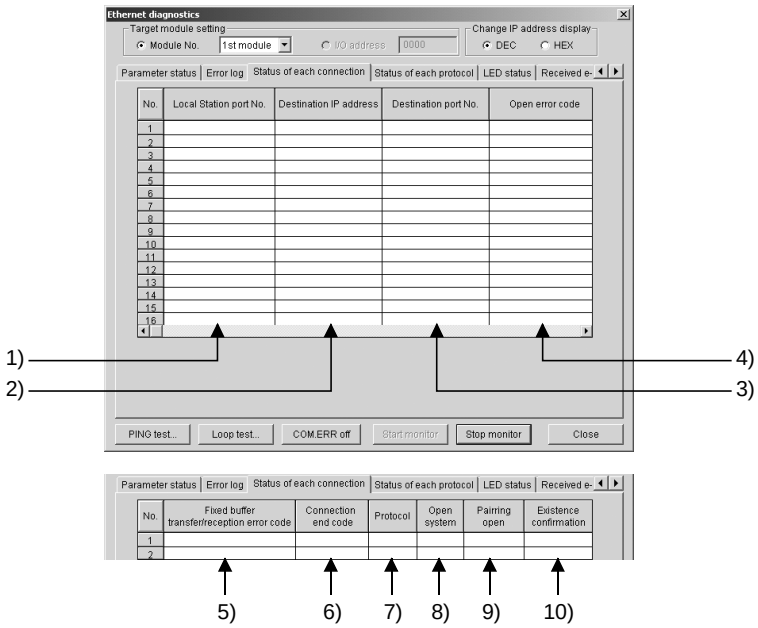
[Purpose]

Monitor the status of each connection.
Up to numbers 16 are displayed for the QCPU.
Up to numbers 8 are displayed for the QnA/ACPU.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → <<Status of each connection>>

[Setting Screen]



[Setting Item]

1) Local Station port No.
Displays a host station port number.

2) Destination IP address
Displays an IP address on the other end of communication.

3) Destination port No.
Displays a port number on the other end of communication.

4) Open error code
Displays an open error code.

5) Fixed buffer transfer/reception error code
Displays a fixed buffer send or receive error code.

6) Connection end code
Displays a connection termination code.

7) Protocol
Displays UDP or TCP.

8) Open system
Displays Active, Unpassive or Full passive.

9) Pairing open
Displays whether pairing is made or not.

10) Existence confirmation
Displays whether check is made or not.

9.10.3 (4) Ethernet diagnostics <Status of each protocol>

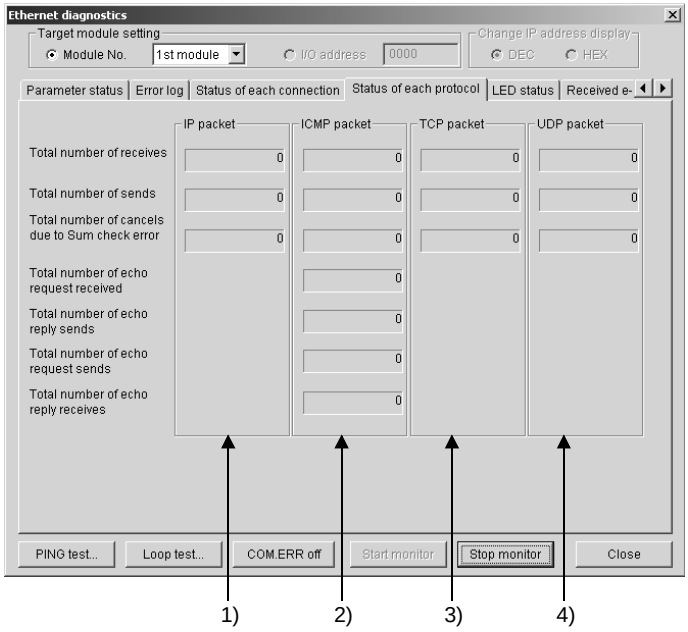
[Purpose]

Monitor the status of each protocol.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → <<Status of each protocol>>

[Setting Screen]



[Setting Item]

1) IP packet

Total number of receives: Displays the total number of receive IP packets.

Total number of sends: Displays the total number of send IP packets.

Total number of cancels due to Sum check error annulments: Displays the total number of times when the receive IP packets were discarded due to sumcheck error.

2) ICMP packet

Total number of receives: Displays the total number of receive ICMP packets.

Total number of sends: Displays the total number of send ICMP packets.

Total number of cancels due to Sum check error annulments: Displays the total number of times when the receive ICMP packets were discarded due to sumcheck error.

Total number of echo request received: Displays the total number of receive ICMP's echo requests.

Total number of echo reply sends:
Displays the total number of send ICMP's echo replies.
Total number of echo request sends:
Displays the total number of send ICMP's echo requests.
Total number of echo reply receives:
Displays the total number of receive ICMP's echo replies.

3) TCP Packet

Total number of receives: Displays the total number of receive TCP packets.
Total number of sends: Displays the total number of send TCP packets.
Total number of cancels due to Sum check error:
Displays the total number of times when the receive TCP packets were discarded due to sumcheck error.

4) UDP Packet

Total number of receives: Displays the total number of receive UDP packets.
Total number of sends: Displays the total number of send UDP packets.
Total number of cancels due to Sum check error:
Displays the total number of times when the receive UDP packets were discarded due to sumcheck error.

9.10.3 (5) Ethernet diagnostics <LED status>

[Purpose]

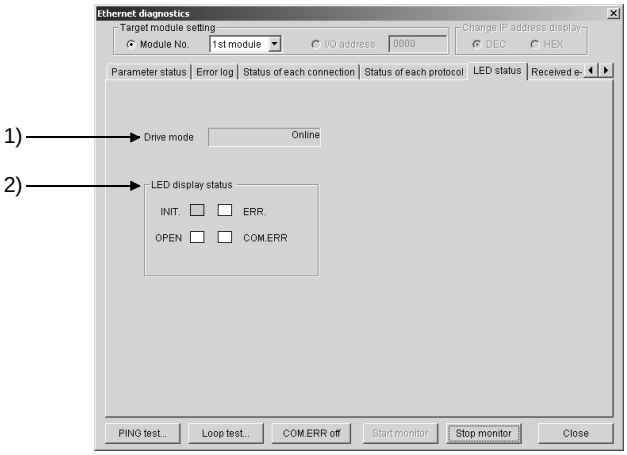
Monitor the LED light-up status on the Ethernet module front.

[Operation Procedure]

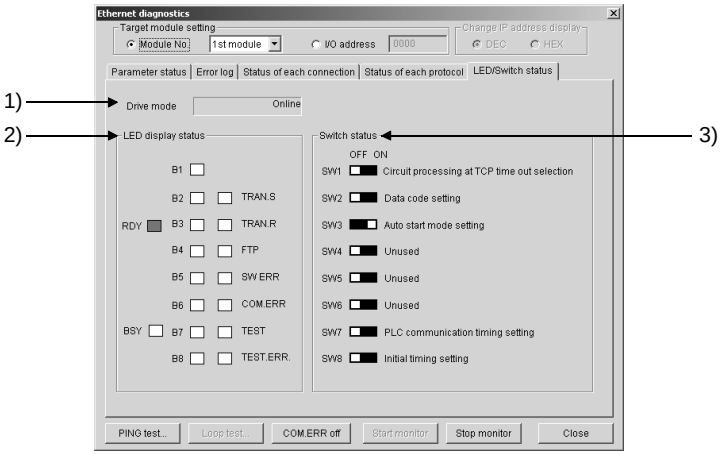
[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → <<LED status>>

[Setting Screen]

In the case of QCPU



In the case of QnACPU



[Setting Item]

1) Drive mode

Displays the switch status (operation mode setting).
A PLC communication error will occur if a RAM or ROM test is preset by the switch setting of the Ethernet module.

2) LED display status

Displays the statuses of the INIT, OPEN, ERR. and COM.ERR LEDs of the module.

3) Switch status (QnACPU only)

Displays the DIP switch statuses of the QE71.

9.10.3 (6) Ethernet diagnostics <Received e-mail information>

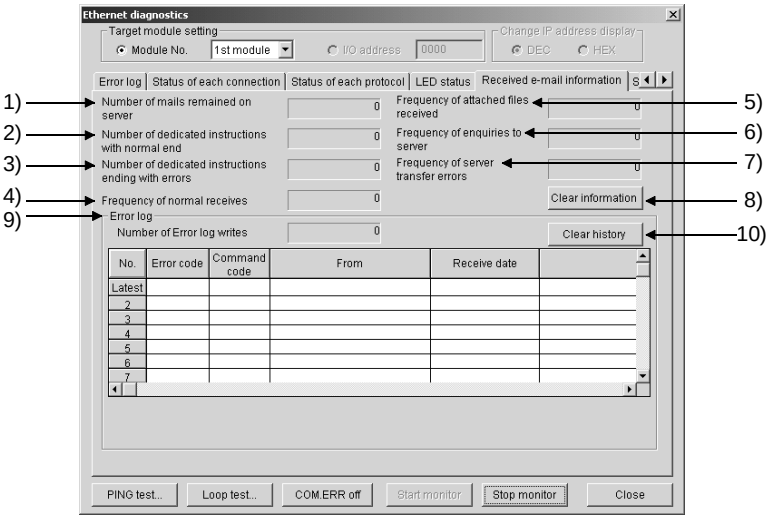
[Purpose]

Monitor the received e-mail information.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → <<Received e-mail information>>

[Setting Screen]



[Setting Item]

1) Number of mails remained on server
   Displays the number of mails remaining in the server.

2) Number of dedicated instructions with normal end
   Displays the number of times when dedicated instructions were completed normally.

3) Number of dedicated instructions ending with errors
   Displays the number of times when dedicated instructions were completed abnormally.

4) Frequency of normal receives
   Displays the number of times when mails were received normally.

5) Frequency of attached file received
   Displays the number of times when attached files were received.

6) Frequency of enquires to server
   Displays the number of server inquiries.

7) Frequency of server transfer errors
   Displays the number of server communication errors.

8) Clear information button
   Clears the count to zero.

9) Error log
   Displays the number of error log write times.

10) Clear history button
   Clears the error log write count to zero and clears all error history.

9.10.3 (7) Ethernet diagnostics <Send e-mail information>

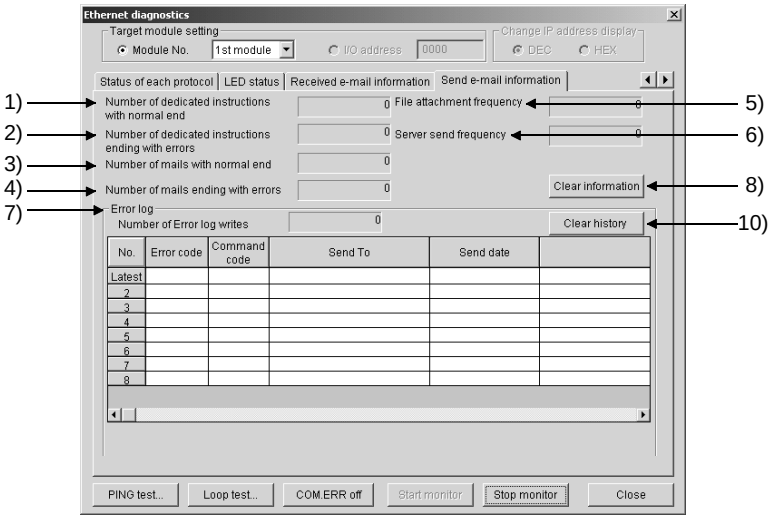
[Purpose]

Monitor the send e-mail information.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → <<Send e-mail information>>

[Setting Screen]



[Setting Item]

1) Number of dedicated instructions with normal end
   Displays the number of times when dedicated instructions were completed normally.

2) Number of dedicated instructions ending with errors
   Displays the number of times when dedicated instructions were completed abnormally.

3) Number of mails with normal end
   Displays the number of mails which were completed normally.

4) Number of mails ending with errors
   Displays the number of mails which were completed abnormally.

5) File attachment frequency
   Displays the number of times when attached files were sent.

6) Server send frequency
   Displays the number of server send times.

7) Error log
   Displays the number of error log write times.

8) Clear information button
   Clears the count to zero.

9) Clear history button
   Clears the error log write count to zero and clears all error history.

9.10.3 (8) Ethernet diagnostics <PING test>

[Purpose]

This test checks the Ethernet module which has completed initial processing on the Ethernet line or the existence of the specified IP address.
A PING test can be conducted either via an Ethernet board or in direct connection with the PLC CPU.

[Operation Procedure]

[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → PING test button, or

[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → Loop test button → PING test button

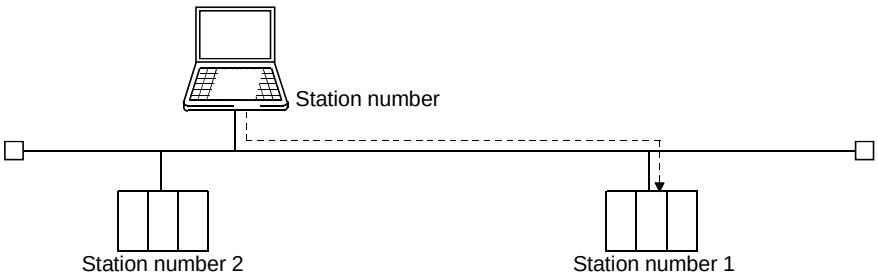
[Required Setting Item]

- Before starting a PING test, always set the Ethernet parameters and MNET/10 routing information. Make settings on GX Developer.
  Refer to "Setting method for communication via the ethernet board" in the GX Developer Operating Manual for setting examples.
- Make sure that the RUN and INIT LEDs of the Ethernet module are lit.

[PING Test Image Diagram]

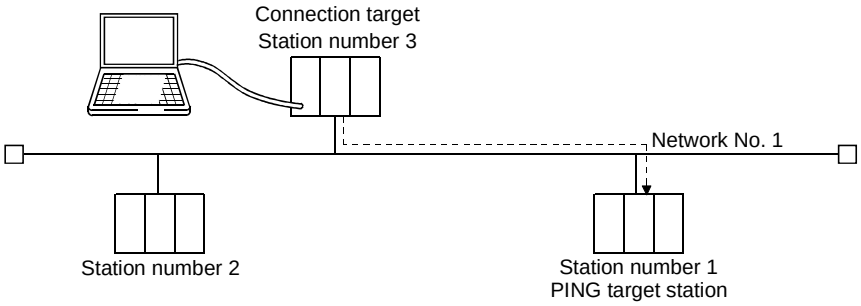
- A PING test from GX Explorer is valid for the Q, QnA and ACPUs Ethernet modules.
- Performing a PING test on the system consisting of the QCPU allows you to check:
  (1) Whether the line between the host station and the equipment on other end are connected properly.
  (2) Whether parameter setting for the host station Ethernet modules was made properly.
  (3) Whether initial processing for the host station Ethernet modules was completed normally.

Via Ethernet board (Q, QnA, ACPUs)

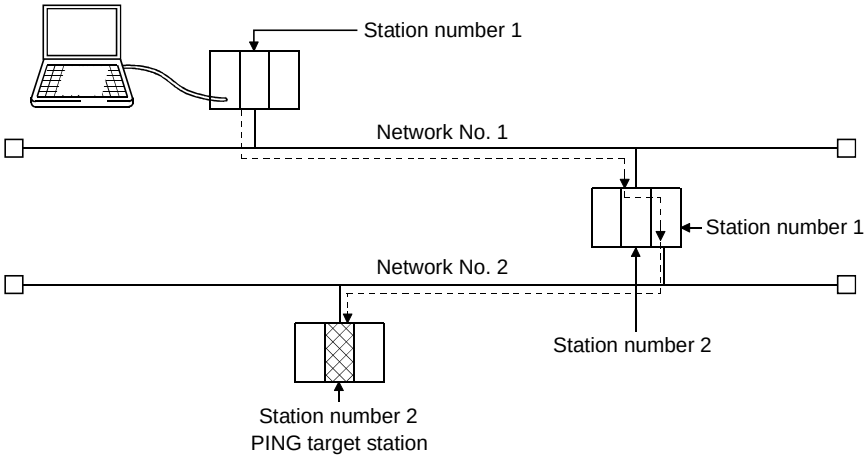


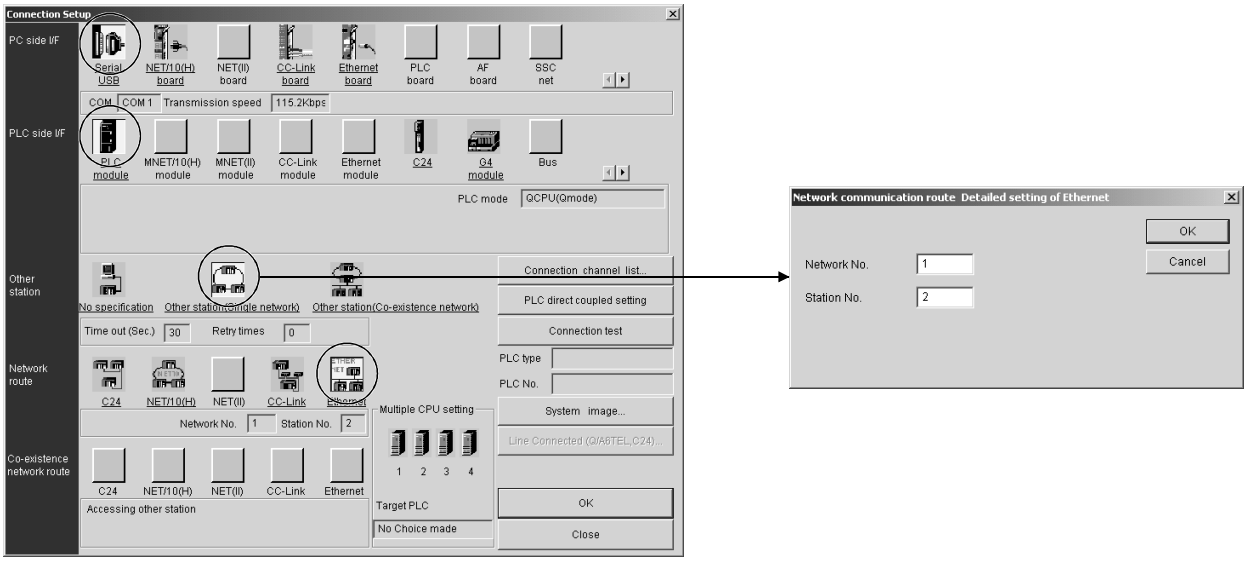
A PING test can be made only within the same segment.

In direct connection with PLC CPU (QCPU only)
In direct connection with the PLC CPU, a PING test can be conducted only when the connected Ethernet module (station number 3 in the following system example) is the Q-compatible E71 (function version B).



A PING test can be made only on the Ethernet module in the same segment as that of the PING test target station.
Make the connection setup setting as shown below to conduct a PING test on station number 2 of network No. 2 in the following system configuration.



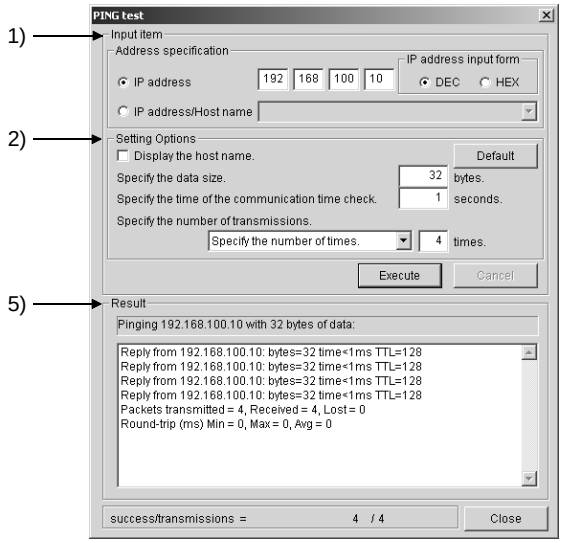


POINT

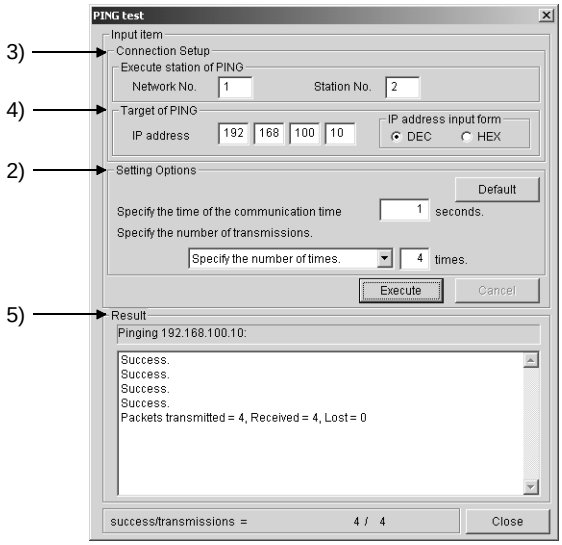
A PING test cannot be made via the MELSECNET/10, MELSECNET/H, CC-Link, computer link or the like.

[Setting Screen]

Ethernet board



When directly connecting PLC CPU



[Setting Item]

1) Address specification

Set the IP address of the module to be PING tested.

2) Option specification

Display the host name:	Displays the host name in Result.
Specify the data size:	The setting range is 1 to 8192 bytes.
Communication time check period:	1 to 30 seconds.
Send count:	1 to 50 times or executed until a stop.

3) Execute station of PING

Set the network number and station number to be PING tested.

4) Target of PING

Set the IP address of the Ethernet module to be tested.

5) Result

Ethernet board

When OK

Pinging Host name [192.168.100.10] with 32 bytes of data:

Reply from 192.168.100.10: bytes = 32 time < 1ms TTL = 128

When NG

Request timed out.

When directly connecting PLC CPU

When OK

Success

Packets transmitted = 4, Received = 4, Lost = 0

When NG

Timeout

Packets transmitted = 4, Received = 0, Lost = 4

9.10.3 (9) Ethernet diagnostics <Loopback test>

[Purpose]

This test sends a loopback test message to the Q-compatible E71s (function version B) of the specified network number and station number in due order to check whether the initial processing of each module has been completed.
A loopback test is compatible with only the function version B of the Q-compatible E71.
The response of the Q-compatible E71 of function version A and the QnA/ACPUs Ethernet modules are handled as no response if they are connected actually.
A loopback test can be conducted either via an Ethernet board or in direct connection with the PLC CPU.

[Operation Procedure]

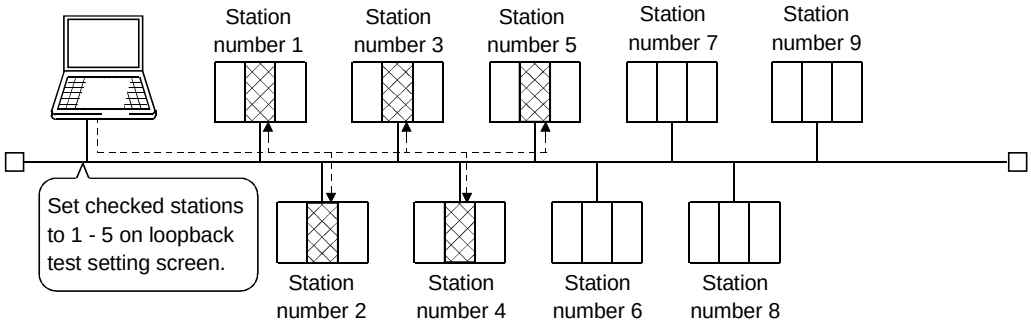
[Diagnostics] → [Network diagnostics] → [Ethernet diagnostics] → Loop test button

[Required Setting Item]

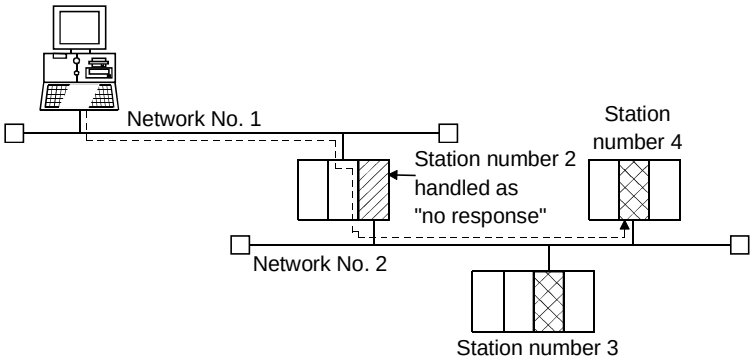
- Before starting a loopback test, always set the Ethernet parameters and MNET/10 routing information. Make settings on GX Developer.
  Refer to "Setting method for communication via the Ethernet board" in the GX Developer Operating Manual for setting examples.
- Make sure that the RUN and INIT LEDs of the Ethernet modules are lit.

[Loopback Test Image Diagram]

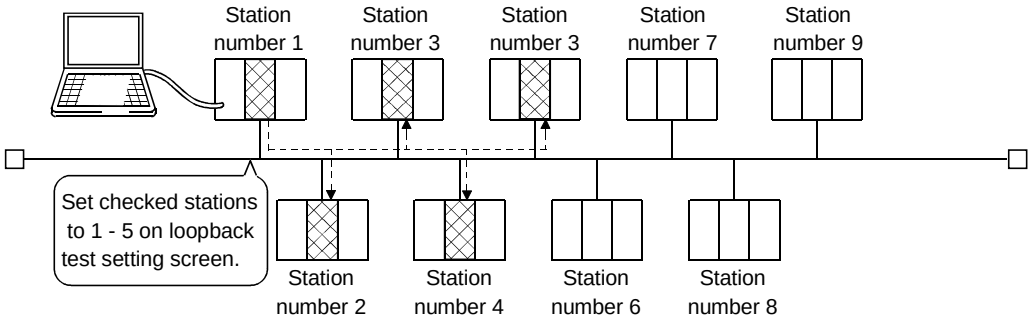
Via Ethernet board



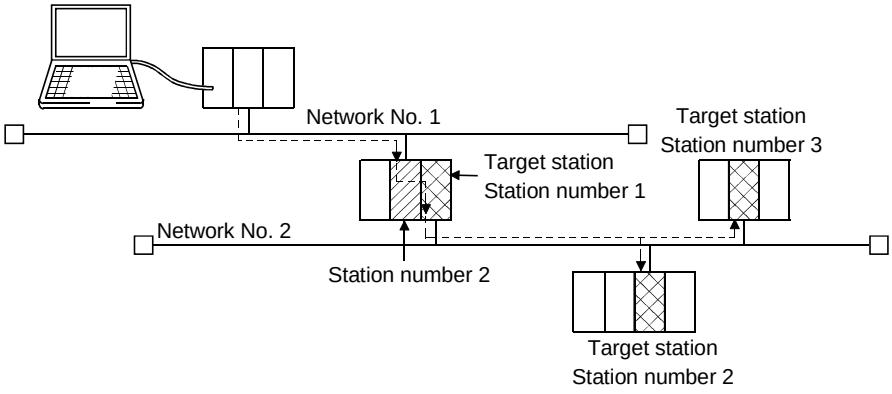
A loopback test can be made on the other network No..
If a loopback test is performed on station numbers 2 to 4 of network No. 2 in the following system configuration, the response of station 2 acting as a test conducting station is handled as "no response".

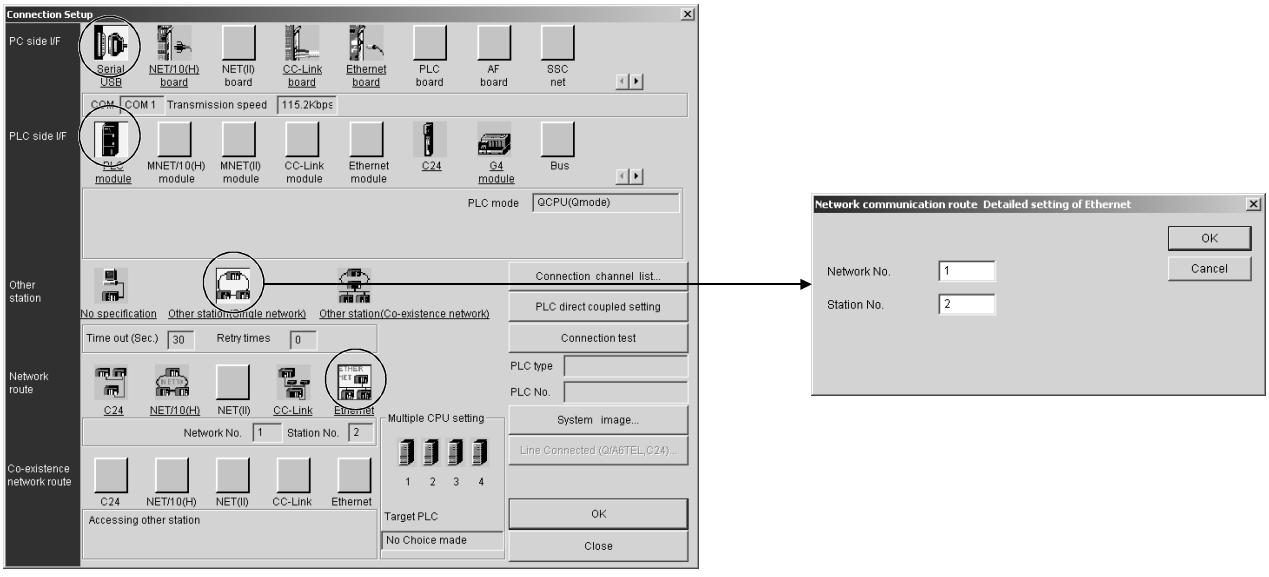


In direct connection with PLC CPU



A loopback test can be made only on the Ethernet modules of the loopback test target network No.
Make the connection setup setting as shown below to conduct a loopback test on the Ethernet modules of network No. 2 in the following system configuration.





POINT
A loopback test is valid for only the system consisting of Ethernet only. A loopback test cannot be made via the MELSECNET/10, MELSECNET/H, CC-Link, computer link or the like.

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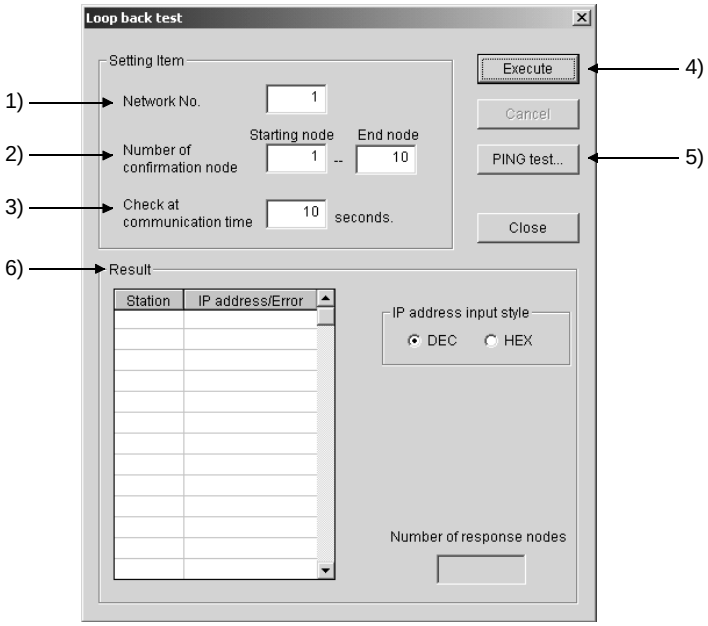
[Setting Screen]



[Setting Item]

1) Network No.

Set the network number to be loopback tested.
The setting range is 1 to 239.

2) Number of confirmation node

Specify the station numbers you want to check.
The setting range is 1 to 64.

3) Check at communication time

The setting range is 1 to 99 seconds.
The Ethernet parameters of GX Developer have TCP re-send timer in Initial Settings Unless the communication time check period setting of a loopback test is longer than the TCP re-send timer setting, the Ethernet module may be regarded as non-existing if its connection is proper.

4) Execute button

Click the button to start the loopback test.

5) PING test button

Click the button to perform the PING test to the other device.
Refer to Section 9.10.3 (8).

6) Result

A loopback test is made in order, starting from station 1, and whether a response is given or not within the communication time check period is displayed in order of station numbers.
Overlapping IP addresses, if any, are displayed red.

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9.11 System Monitor

[Purpose]

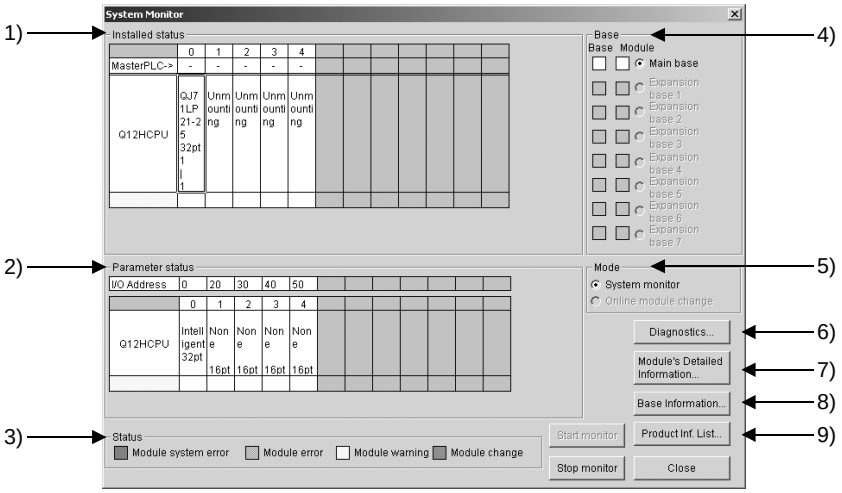
Monitor the system including a PLC CPU (system configuration and error status of each module).

The function is available for QCPU (Q mode) and MELSECNET/H remote station.

[Operation Procedure]

[Diagnostics] → [System monitor] → Target name specification (In the case PLC diagnostics is started when PLC CPU is not selected in the PLC side window)

[Setting Screen]



[Setting Item]

1) Installed status

Shows the special modules mounted on the base selected among the main base and extension bases 1 to 7. (Double-clicking the model name shows the module detail information dialog box.)

Double-clicking the CPU model name starts the PLC diagnostics function.

When the A series is added to connect the special function modules of the A, "A intelli" appears on the screen.

The following table indicates the error status display categories for the PLC CPUs in a multiple CPU configuration.

Display Color	Category	Error Definition	PLC CPU Status
Red	Major error	MAIN CPU down	CPU reset, etc.
Orange	Moderate error	Stop error	Parameter error Instruction code error CPU STOP, etc.
Yellow	Minor error	Continuation error	Battery error Annunciator error ON CPU RUN enable error, etc.

2) Parameter status

Shows the parameter settings written to the PLC. The parameters not set do not appear.

In a multiple CPU configuration, "-" appears at the I/O address display when a PLC CPU is set.

For the PLC CPU error status (in a multiple CPU configuration) display category, refer to Section 1).

3) Status

- Module system error
  Indicates that a module hardware fault (error equivalent to WDT error) has occurred or a module inoperative condition is detected.
- Module error
  Indicates that the environment required for the module to function is not completed. (Error equivalent to parameter error has occurred)
- Module warning
  Indicates inadequacy in user operation or sequence program (e.g. FROM, TO).

	Display Color	PLC Status
Module normal	White	RUN
Module system error	Red	STOP
Module error	Orange	RUN
Module warning	Yellow	RUN

4) Base

Normal bases are shown white and faulty bases red.

For the modules, refer to 3) Status.

5) Mode

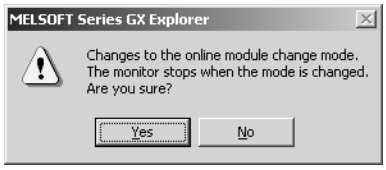
System monitor:

Select the item when performing system monitor.

Online module change (can be selected only for the Q12PH or Q25PHCPU):

Select the item when making online module change.

As the following confirmation dialog box for switching to the online module change mode appears, click Yes.


MELSOFT Series GX Explorer
Changes to the online module change mode.
The monitor stops when the mode is changed.
Are you sure?
Yes
No

Refer to Section 9.11.1 for the explanation of online module change operation after the above operation.

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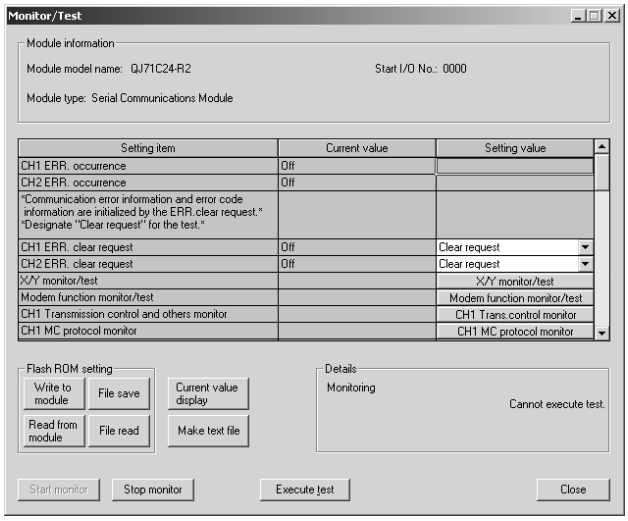
6) Diagnostics button

Move the cursor to the special module displayed in Installed status and click the Diagnostics to show the following dialog box.

The dialog box does not appear if the utility package has not been installed. For details, refer to the manual of the corresponding utility.

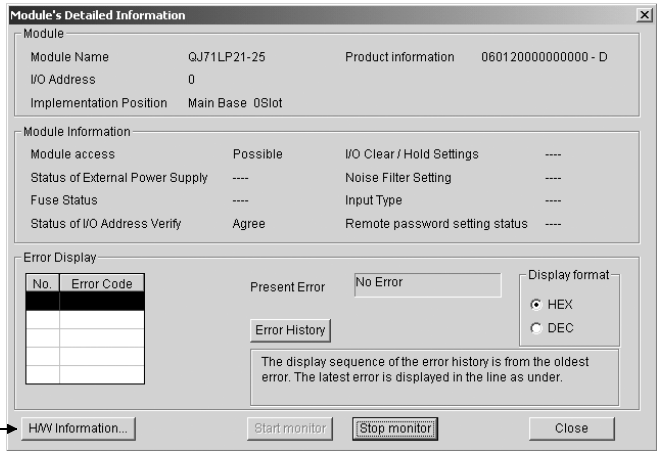
<Example> Serial communication module monitoring



7) Module's Detailed Information button

Selecting the module model name displayed in "Installed status", the following dialog box.

"-B" in Product information indicates the function version of the module.



[Setting Item]

a) H/W Information button

Click the button to display "H/W information" dialog box that shows the hardware information.

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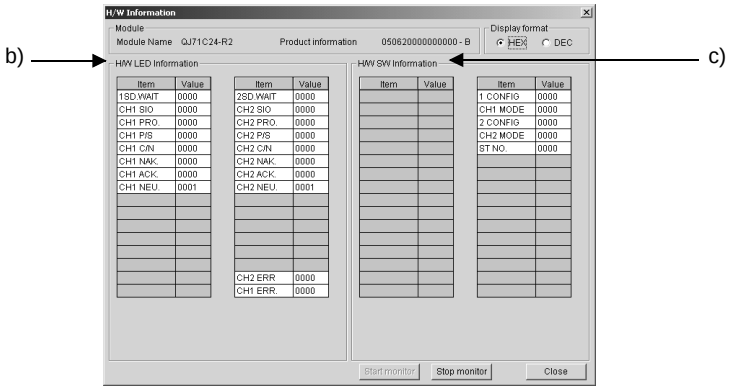


[Setting Item]

b) H/W LED Information button

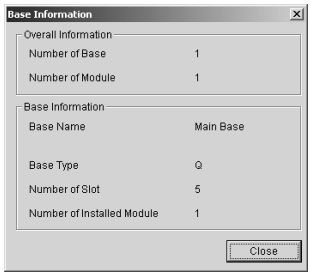
The module status is displayed. For details, refer to the manual of the module.

c) H/W S/W Information button

The hardware switch status is displayed. For details, refer to the manual of the module.

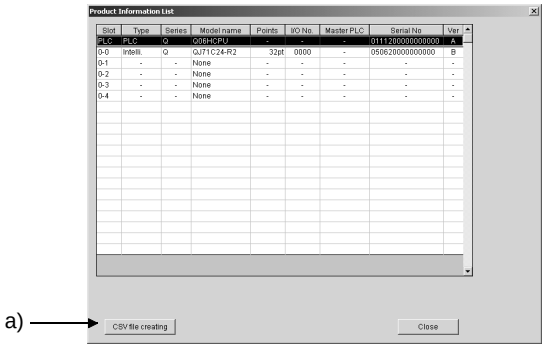
8) Base Information button

Click the button to display "Base Information" dialog box that shows the base information.



9) Product Inf.List button

Click the button to display the product information list of the modules mounted on the base.



[Setting Item]

a) CSV file creating button

"Save As" dialog box appears by clicking the button. Set the file name. The file can be opened by using Excel or similar application.

POINT

The following appears on the screen if there are differences between PLC parameter I/O assignment and actual Installed status. Therefore, set the PLC parameter I/O assignment to meet the actual Installed status. Set the PLC parameter I/O assignment using GX Developer.

System monitor display status

Assignment	Actual Loading	Empty	Input	Output	Intelli
0 empty points	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	0 empty points	0 empty points	0 empty points	0 empty points
n empty points	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	n empty points	n empty points	n empty points	n empty points
0 input points	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	0 empty points	0 empty points	0 empty points	Assignment error
n input points	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	n empty points	n input points	n input points	Assignment error
0 output points	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	0 empty points	0 empty points	0 empty points	Assignment error
n output points	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	n empty points	n output points	n output points	Assignment error
0 intelli points	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	0 empty points	Assignment error	Assignment error	Assignment error
n intelli points	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	n empty points	Assignment error	Assignment error	n intelli points
No assignment	Installed status	Not mounted	m input points	m output points	m intelli points
	Parameter status	p empty points	m input points	m output points	m intelli points

n points: Number of assignment points
m points: Number of actual mounting points
p points: Number of empty slot points

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9.11.1 Online module change

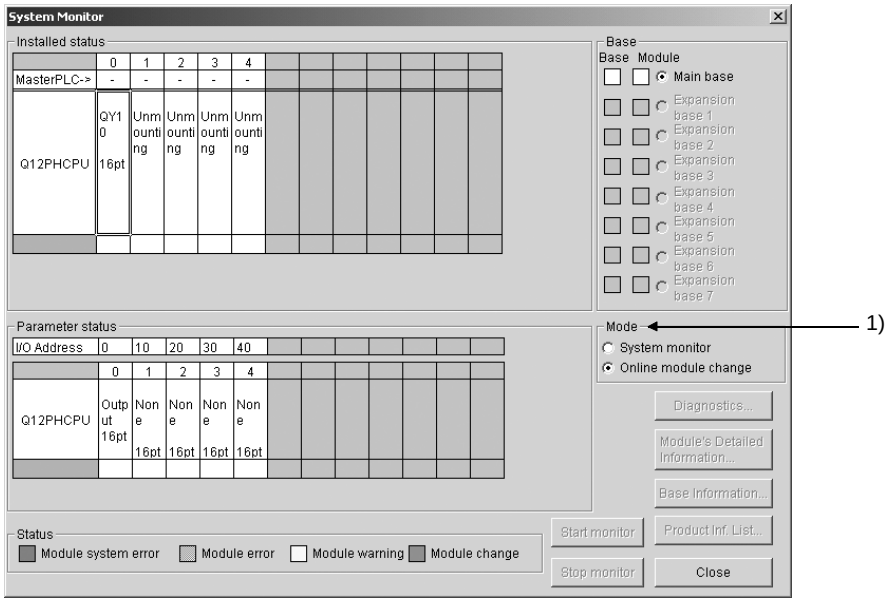
[Purpose]

Perform online module change, i.e., replace the module without stopping the system.

[Operation Procedure]

[Diagnostics] → [System monitor]

[Setting Screen]



[Setting Item]

1) Mode

System monitor: Select the item when performing system monitor.

Online module change (Default):

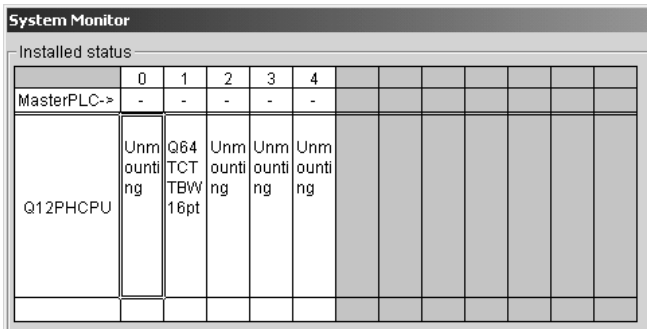
Select the item when performing online module change.

Available for the process CPU only.

[Operation Procedure]

The following explains a sequence of operations for performing online module change in the system monitor mode.

1. Select the module to be replaced at "Installed status" section, and double-click or right-click to display the shortcut menu. Select [Online module change] from the menu. (Module selecting waiting status)



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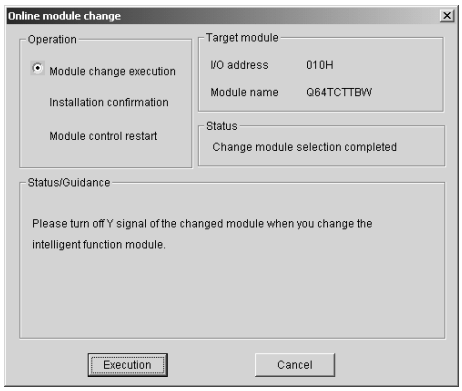
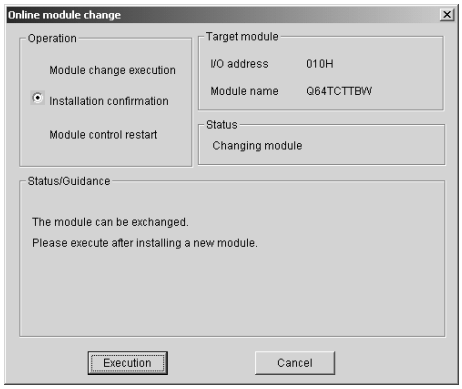
2. After "Online module change" dialog box has appeared, click Execute.
(Online module change execution confirmation)



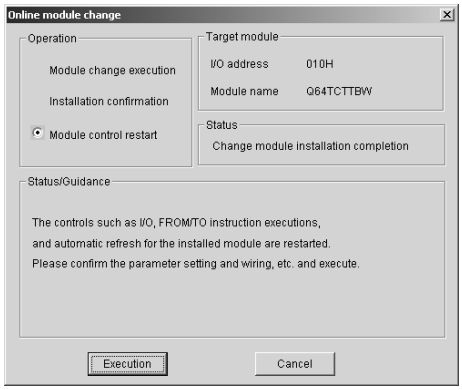
Depending on the faulty condition of the module to be replaced, the type of the module may not be acquired. In this case, "Unknown" appears in the Target module name display field.

3. The dialog box indicating that online module change can be made appears.
(Online module change completion confirmation)



4. After replacing the module, click Execute.

5. If online module change is completed correctly, the following dialog box appears. (Module control resumption confirmation)



If it is not completed correctly, the following dialog box appears.

MELSOFT Series GX Explorer
The installed module name is different from the previous module.
Please confirm wiring after installing the module of the same module name and execute again.
OK

Clicking OK display "Online module change execution" dialog box. Restart the operation from the step 3 of [Operation Procedure].

POINT

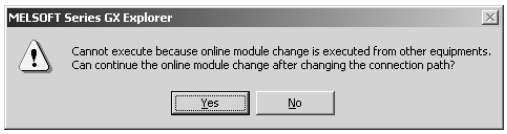
When performing a ladder monitor or device test while replacing module online, click Cancel to temporarily interrupt the operation. After that, a ladder monitor/device test can be performed to confirm the system status.

Restrictions on online module change

(1) By using GX Exlorer multiple modules cannot be replaced simultaneously.

(2) Note that if the Process CPU is in either of the following statuses, online module change cannot be performed.
1. Process CPU's RESET/L.CLR is reset.
2. Process CPU is stopped due to stop error.

(3) If online module change is performed from two personal computers to one PLC CPU, the following dialog box appears on the personal computer where online module change was performed later.


MELSOFT Series GX Explorer
Cannot execute because online module change is executed from other equipments.
Can continue the online module change after changing the connection path?
Yes
No

Clicking Yes shifts the right to perform online module change to the personal computer that made access later.

(4) If the PLC CPU is reset or powered off while the Online module change execution dialog box is on the screen, online module change cannot be continued and the following dialog box appears.

MELSOFT Series GX Explorer
The processing of an online module change can not be executed.
The following reasons can be thought.
- A PLC was reset.
- Connection route was changed.
OK

9.12 Alarm Notification

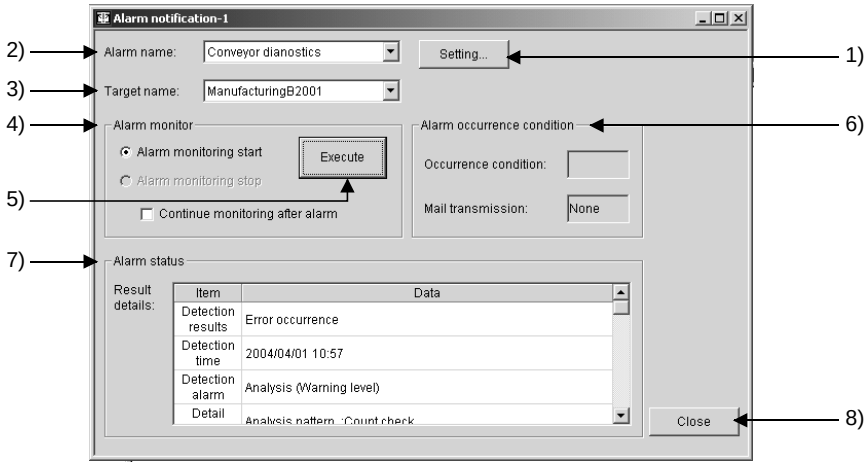
[Purpose]

Monitor the PLC CPU status.
Before using the function, set the error occurrence condition and execute each diagnostics (operation analysis, error diagnostics, PLC diagnostics and diagnostics based on device value.) Multiple diagnostics can be executed.
Use of the function displays the PLC CPU status when an error occurs, and notifies of the detailed results by sending an e-mail to the specified address.
As an alarm name can be set to each of the settings, it is no longer necessary to make the relevant settings for each time.
Multiple “Alarm notification” dialog boxes can be simultaneously started.

[Operation Procedure]

[Diagnostics] → [Alarm notification]

[Setting Screen]



[Setting Item]

1) Setting button

The button for setting alarm notification.
Click the button to display "Alarm notification setting" dialog box, and set the diagnostics used for alarm notification.
For setting details, refer to Section 9.12.1.

2) Alarm name

Select an alarm name.

3) Target name

Select a target name.

4) Alarm monitor

Select "Alarm monitoring start" or "Alarm monitoring stop".
Checking "Continue monitoring after alarm" continues the monitoring when an error occurs and the results are detected.

5) Execute button

Click the button to execute the operation selected at "Alarm monitor" section 4).

6) Alarm occurrence condition

Occurrence condition: The present alarm status is displayed by color.

Function	Error type	Color
Operation analysis	Normal operation	Green
	Warning	Yellow
	Error	Red
Error diagnostics	Normal operation	Green
	Major error	Red
	Moderate error	Yellow
	Minor error	Yellow
	Warning	Yellow
PLC diagnostics	Normal operation	Green
	Error	Red
Diagnostics by device value	Normal operation	Green
	Condition is satisfied	Red

Mail transmission: Indicates the e-mail transmission status. (Only when an alarm is issued by e-mail)
Only the latest information displayed at "Alarm status" section 7) can be notified.

None: Alarm monitoring is being performed or stopped.
Transmitting: E-mail is being transmitted.
Transmission succeeded: E-mail transmission is completed.
Transmission failed: E-mail transmission is failed.

7) Alarm status

The diagnostics function that detected the error and the error details are displayed.
For details, refer to the result details table on the next page.
If "Continue monitoring after alarm" is checked at section 4), the latest information appears in the top line. Up to 256 alarm records can be displayed.
(If the same alarm continuously occurs, the information will not be updated.)
The history (alarm records) is cleared by opening the screen (for the first time) or executing an alarm monitoring.

8) Close button

Click the button to close "Alarm notification" dialog box.
If alarm monitoring is being executed at this time, the alarm monitoring is terminated and the dialog box is closed.

Result details

No.	Item		Display details
1	Detection results		Warning/Error level • Major error occurrence • Moderate error occurrence • Minor error occurrence * The error is ranked as major, moderate or minor only for error diagnostics. For other function, "Error occurred" is displayed. • Warning occurrence • Error occurrence
2	Detection time		Warning/Error occurrence time Display format: YYYY/MM/DD HH:MM
3	Detection alarm		Alarm type to be notified • Operation analysis [Analysis name] • Error diagnostics [Error diagnostics name] • PLC diagnostics [Target name] • Device value [Target name]
4	Detail setting	Operation analysis	• Analysis pattern: [Analysis pattern name] • Occurrence area: [Occurrence area details] • Analysis condition: [Analysis condition details]
		Error diagnostics	• Error No.: [Error No. of error diagnostics] • Error message: [Error message of error diagnostics]
		PLC diagnostics	• Error No.: [Error No. of PLC diagnostics] • Error message: [Error message of PLC diagnostics]
		Device value	Device name/value: [Device name] [Condition] [Device name/value] ([Dec/Hex])

[Example of displayed result]

1. Operation Analysis

Detection results	Error occurrence
Detection time	2003/02/22 14:59
Detection alarm	Operation analysis (Parts quantity check)
Details	Analysis pattern: High/Low limit value check
	Occurrence area: R201=4002(Dec)
	Analysis condition: Exceeding the above Err Val (High).

2. Error diagnostics

Detection results	Major error occurrence
Detection time	2002/09/26 15:29
Detection alarm	Error diagnostics (Manufacturing line error)
Details	Error No.: 2003
	Error message: An error has occurred in the manufacturing line.

3. PLC diagnostics

Detection results	Error occurrence
Detection time	2003/02/22 14:59
Detection alarm	PLC diagnostics (Carry-in A1000)
Details	Error No.: 1500
	Error message: AC DOWN

4. Device value

Detection results	Error occurrence
Detection time	2002/09/26 15:29
Detection alarm	Device value (Manufacturing B2001)
Details	D101 >= 32546 (Dec)

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9.12.1 Alarm notification setting

[Purpose]

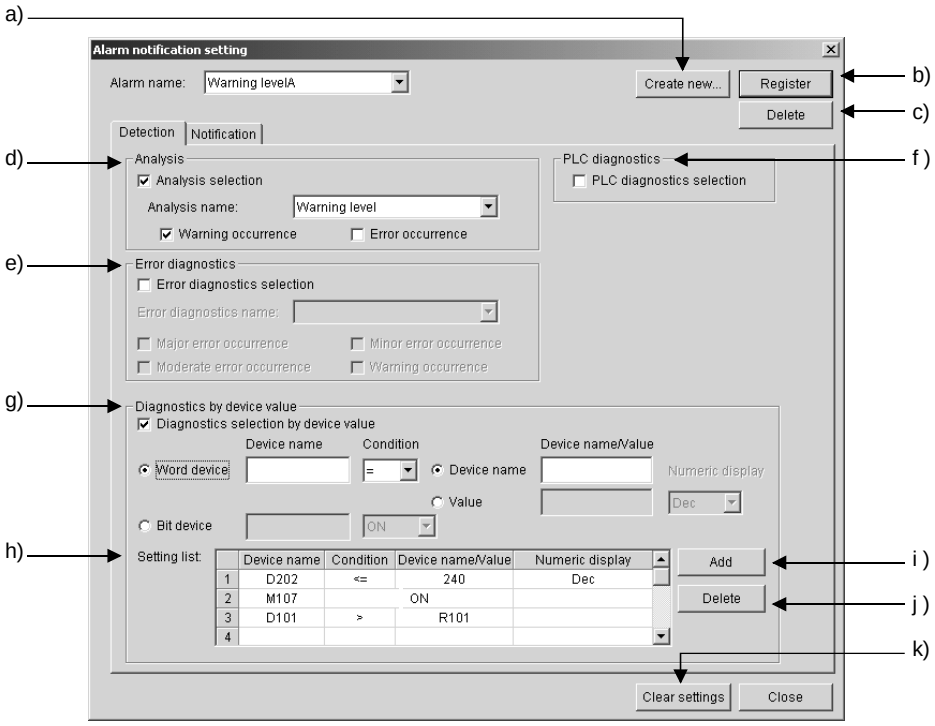
Set the alarm notification condition.

[Operation Procedure]

[Diagnostics] → [Alarm notification] → Setting button

[Setting Screen]

(1) << Detection >>



[Setting Item]

a) Create new button

Click the button to display "Create new Alarm name" dialog box.
Create a new alarm name.
For the applicable character type and max. number of characters for text input, refer to section 5.3.

b) Resister button

Click the button to register the settings.

c) Delete button

Click the button to delete the alarm name displayed at "Alarm name" section and the relevant settings.

d) Analysis

Check the item when using the operation analysis function for alarm notification.

Analysis name:

Select the analysis name set in "Analysis setting" dialog box.
For details, refer to Section 9.8.
The error corresponding to the checked level ("Warning occurrence" or "Error occurrence") is displayed at "Result details" section in "Alarm notification" dialog box.

e) Error diagnostics

Check the item when using the error diagnostics function for alarm notification.

Error diagnostics name:

Select the error diagnostics name set in "Error diagnostics" dialog box.
For details, refer to Section 9.7
The error corresponding to the checked level ("Major error occurrence", "Moderate error occurrence", "Minor error occurrence" or "Warning occurrence") is displayed at "Result details" section in "Alarm notification" dialog box.

f) PLC diagnostics

Check the item when using the PLC diagnostics function for alarm notification.
For details, refer to Section 9.9.

g) Diagnostics by device value

Check the item when using the device monitor function for alarm notification.
For details, refer to Section 9.2.

When "Word device" is selected

Device name:	Set a word device name to be used for the error occurrence condition.
Condition:	Select a condition for detecting an error from the following. "= (equal) ", ">= (greater than or equal to)", "<= (less than or equal to)", "< > (not equal to)", "> (greater than)", "< (less than)".
Device name/value:	Select the data used for the condition When selecting "Device name", specify the word device to be compared. When selecting "Value", select "Dec" or "Hex" for "Numeric display"

When "Bit device" is selected

Device name:	Set a bit device name to be used for the error occurrence condition.
Condition:	Select a condition for detecting an error from the following. (T/C device can be set for "Contact" only.) "ON", "OFF", "Rising" or "Falling".

h) Setting list

Multiple devices can be registered as trigger conditions.
Up to devices can be registered.

i) Add button

Click the button to add the settings made at "Diagnostics by device value" section g) to "Setting list" h).

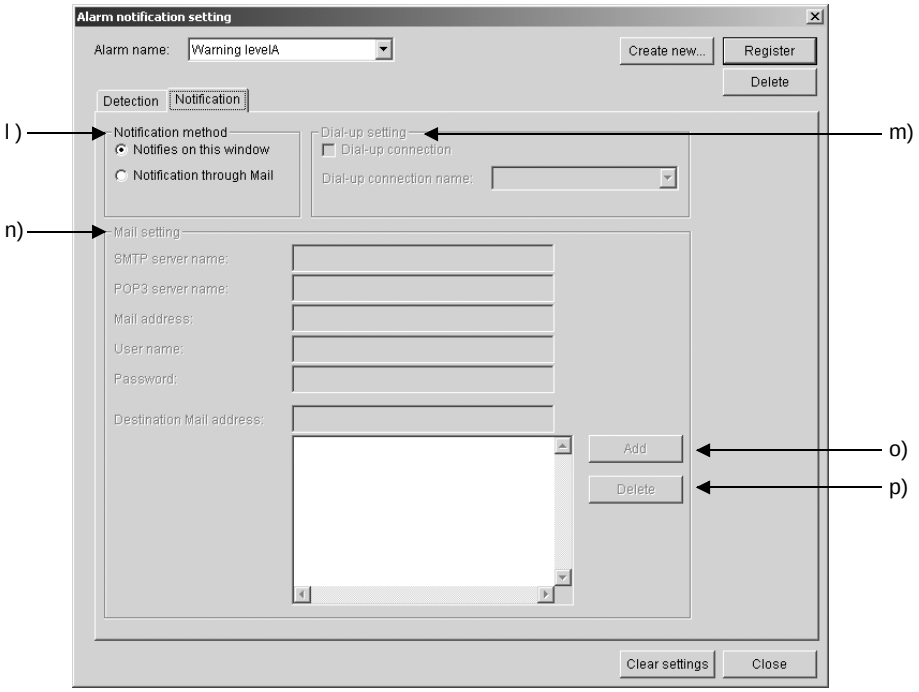
j) Delete button

Click the button to delete the settings selected at to "Setting list" h).

k) Clear settings button

Click the button to clear all settings displayed in << Detection >> and << Notification >>.

(2) << Notification >>



[Setting Item]

l) Notification method

Select the method to issue an alarm when an error occurs.

m) Dial-up setting

Check the check box when making a dial-up connection.

Specify the dial-up connection name from the registered options.

n) Mail setting

Available only when "Notification through Mail" is selected at "Notification method" l).

The data displayed at "Alarm status" section in "Alarm notification" dialog box is transmitted as message. Title cannot be set.

Make sure to enter the POP server name and password, as they may be required depending the used provider.

For the applicable character type and max. number of characters for text input, refer to section 5.3.

SMTP server name:

Enter the SMTP server host name or IP address.

POP3 server name:

Enter the POP3 server host name or IP address.

Mail address:

Enter the mail address of sender.

User name:

Enter the user name for logging on to the POP3 server.

Password:

Enter the password for logging on to the POP3 server.

Destination Mail address:

Enter the mail address to which the error information will be transmitted.

Up to 20 mail addresses can be registered.

The registered mail addresses are displayed in list format.

o) Add button

Click the button to add the address entered at "Destination Mail address" input box at "Mail setting" section n).

p) Delete button

Click the button to delete the addresses selected in the Destination mail address list.

[Operation Procedure]

When adding an analysis name

1. Click Setting in "Alarm notification" dialog box to display "Alarm notification setting" dialog box.
2. Click Create new. As "Create new Alarm name" dialog box appears, enter a new alarm name and click OK.
3. Make the settings in << Detection>> and << Notification >> within "Alarm notification setting" dialog box.
   If all items have already been set at this time, the settings can be cleared by clicking Clear settings.
4. After the settings are made, click Resister to register the alarm name and settings.

When changing the settings of an alarm name

1. Click Setting in "Alarm notification" dialog box to display "Alarm notification setting" dialog box.
2. Select the alarm name of which settings to be changed at "Alarm name" section in "Alarm notification setting" dialog box.
3. As the corresponding settings are displayed, change the settings.
4. After the change is completed, click Resister to ensure the changed settings.

When deleting an alarm name

1. Click Setting in "Alarm notification" dialog box to display "Alarm notification setting" dialog box.
2. Select the alarm name to be changed at "Alarm name" section in "Alarm notification setting" dialog box.
3. Click Delete c) . As the corresponding confirmation dialog box appears, click Yes. The alarm name and the relevant settings are all deleted.

10 ACTUAL OPERATION AND TEST

This section explains the remote operation and the device test function executable from [Operation].

10.1 Remote Operation

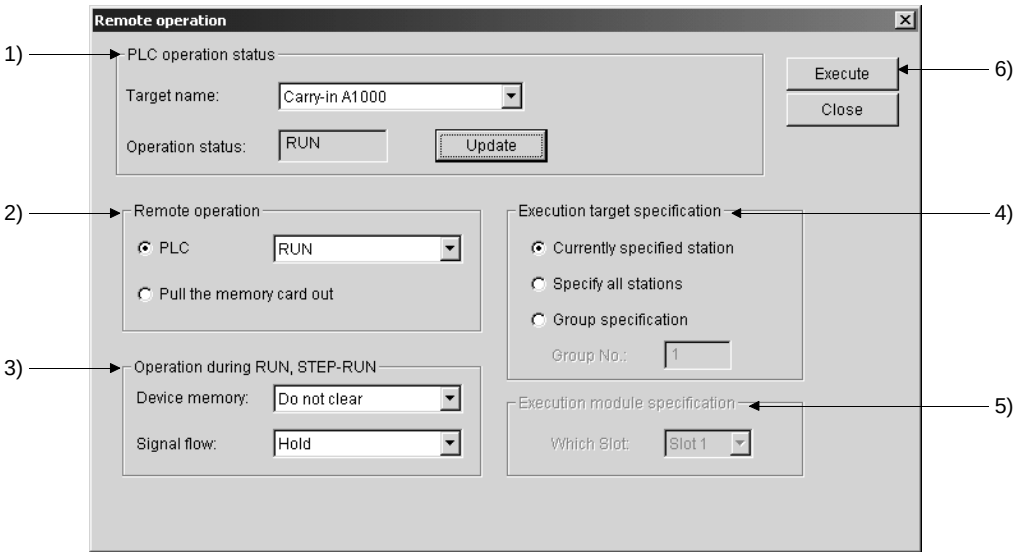
[Purpose]

Change the PLC CPU execution status on the GX Explorer.
The remote operation of the Q/QnA/ACPU can be executed when the PLC CPU is in RUN status.
When a FXCPU is selected, the remote operation is available for the FX_{1N}, FX_{1NC}, FX_{2N} and FX_{2NC} PLCs only and is executable in either of RUN or STOP status of the PLC CPU.

[Operation Procedure]

[Operation] → [Remote operation]

[Setting Screen]



[Setting Item]

1) PLC operation status

Target name: Select a target name.

Operation status: Click Update to display the current status of the PLC CPU.

2) Remote operation

Specify the PLC CPU status.
The "Pull the memory card out" option is valid for the QCPU only.

3) Operation during RUN, STEP-RUN

Set the operation of the device memory and signal flow in RUN or STEP-RUN status.

4) Execution target specification

Set the target station(s) for the remote operation.

Currently specified station: Executed only at the station currently specified as a target.

Specify all stations: Executed at all stations in the network of the currently specified station. Set any of Slot 1 to 4 in "Execution module specification".

Group specification: Executed at the specified group in the network of the currently specified station.
Specify Group No. and set any of Slot 1 to 4 in "Execution module specification".

5) Execution module specification

Set the execution module by specifying any of Slot 1 to 4.
This setting is valid only when "Specify all stations" or "Group specification" is selected in "Execution target specification".

6) Execute button

The dialog box for confirmation is displayed and clicking Execute will execute the remote operation.

The PLC CPU statuses when executing the remote operation are as shown below.

	Key switch	Remote Operation						Remarks
		RUN	STOP	PAUSE	Latch clear	Reset *1	Remote STEP-RUN	
ACPU	RUN	RUN	STOP	PAUSE	-	-	STEP-RUN	The remote operation setting is stored when the key switch is set to STOP, and activated when it is set to RUN.
	STOP	STOP	STOP	STOP	-	-	STOP	
	PAUSE	PAUSE	STOP	PAUSE	-	-	STEP-RUN	
	STEP-RUN	STEP-RUN	STOP	PAUSE	-	-	STEP-RUN	
QCPU	RUN	RUN	STOP	PAUSE	N/A *2	N/A *2	-	
	STOP	STOP	STOP	STOP	Latch clear	Reset	-	
QnACPU	RUN	RUN	STOP	PAUSE	N/A *2	N/A *2	STEP-RUN	
	STOP	STOP	STOP	STOP	Latch clear	Reset	STOP	
FXCPU	RUN	RUN	STOP	-	-	-	-	Remote operation is executable irrespective of the key switch status.
	STOP							

*1: The remote reset must be enabled on GX Developer by [PLC parameter] - <<PLC system>>.
*2: The operation is executable when STOP is set by the remote operation.

POINT

- "Remote operation" setting
  RUN, STOP, PAUSE and STEP-RUN can be specified for the QnA/ACPU.
  RUN, STOP and PAUSE are available for the QCPU. "Reset" and "Latch clear" can be set for the Q/QnACPU.
  For the FXCPU, RUN and STOP can be specified.
  "Pull the memory card out" is available for the QCPU only although this must not be executed for the basic model QCPU.
- "Operation during RUN, STEP-RUN" setting
  This setting is valid only when the Q/QnACPU is used and "RUN" or "STEP-RUN" is specified in "Remote operation".
- "Execution target specification" setting
  For "Specify all stations", the network stations linked by MNET/10 or MNET/H are applicable. This setting is not available for the FXCPU.
- In the remote operation of the FX_{1N}, FX_{1NC}, FX_{2N} and FX_{2NC} PLCs, the ON/OFF status of M8035 (Forced RUN mode), M8036 (Forced RUN), M8037 (Forced STOP) is changed depending on the PLC CPU status.
  Note that the remote operation is available irrespective of the RUN and STOP switch status on the PLC.

10.2 Device Test

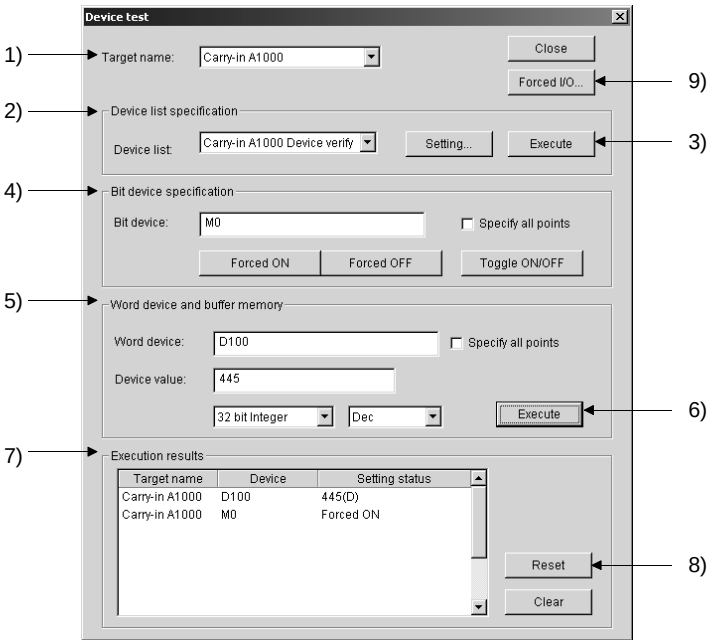
[Purpose]

Forcibly turn ON or OFF the bit devices of the PLC CPU and/or change the current values of the word devices. Batch execution is available for multiple devices.

[Operation Procedure]

[Operation] → [Device test]

[Setting Screen]



[Setting Item]

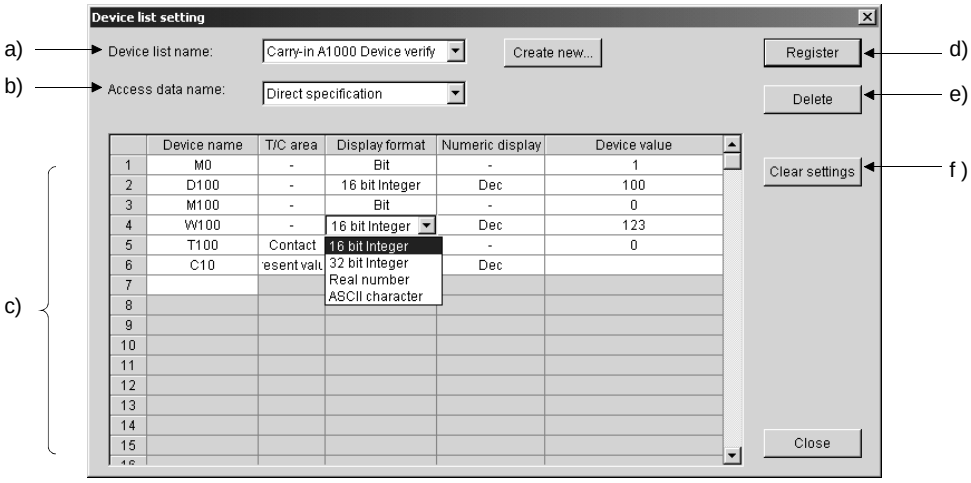
1) Target name

Select a target name.

2) Device list specification

Clicking Setting displays the following "Device list settings" dialog box.

The device list set in "Device list setting" dialog box is displayed in the combo box. Make selection from the listed items.



[Setting Item]

a) Device list name

Specify the device list name. To create a new device list, click Create new and create Device list name in "New Device list name" dialog box.

b) Access data name

Specify the target device by specifying the access data name.

c) Setting device list

The device setting states are displayed.
Some cells show pull-down menus with setting items.
When setting device values, select ON or OFF using the pull-down menu or directly enter a numeric value.

d) Register button

Click the button to register the list as the device list name specified with the setting data.

e) Delete button

Click the button to delete the specified device list name.

f) Clear settings button

Click the button to clear the setting data (all devices) under the specified device list name. When an access data name has been specified, only device values will be deleted. If "Direct specification" is selected, all the data will be deleted.

POINT

- "Direct specification" allows you to input the device list items directly.
- Deletion on a per-line basis is available only when "Direct specification" is selected. Click the line No. and delete by Delete .

3) Execute button

Click the button to execute the device test based on the device list.

4) Bit device specification

Set a bit device.

Clicking Forced ON , Forced OFF or Toggle ON/OFF can change the bit device value.

If the "Specify all points" check box is checked, all the device points for the specified device will be tested.

5) Word device and buffer memory

Set a word device.

Enter a device value and select "display format" or "numeric display".

Available display format: 16 bit Integer, 32 bit Integer, Real number or ASCII character

Available numeric display: Dec or Hex

For buffer memory, specify as a word device in "U**\G**" format.

If the "Specify all points" check box is checked, all the device points for the specified device will be tested.

POINT

- For buffer memory, the "Specify all points" setting is not available. Also, forced ON/OFF is not executable.

6) Execute button

Click the button to update the current word device value change.

7) Execution results

Devices and their setting statuses after device test execution are displayed.

8) Reset button

By selecting a line in the Execution results area 7) and clicking Reset, the selected line's settings are set to 2), 4) and 5) again.

9) Forced I/O button

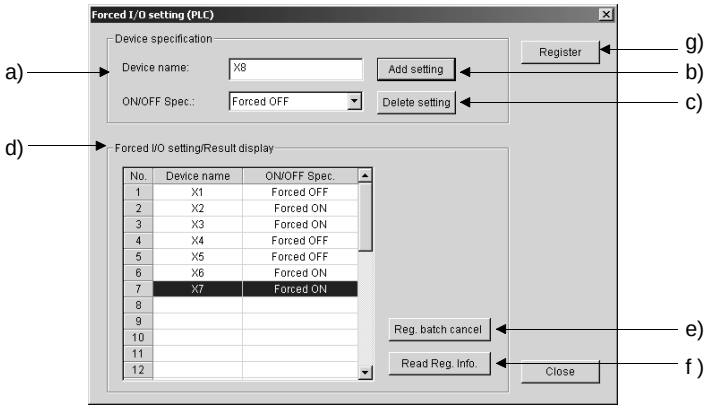
Click the button to display "Forced I/O setting" dialog box.
This button is usable for the high performance QCPU and process CPU only.

[Purpose]

Specify a device to execute forced I/O.

[Setting Screen]

(1) When specifying QCPU (Except for remote I/O)



[Setting Item]

a) Device name

Specify a name of the device where forced I/O is to be executed.

b) Add setting button

Click the button to add the current forced I/O setting to the list d). Up to 32 items can be set.

c) Delete setting button

Click the button to delete the current forced I/O setting from the list d).

d) Forced I/O setting/result display

The preset device names and ON/OFF settings are displayed as a list.

e) Reg. batch cansel button

Click the button to cancel all the forced I/O setting registered to the target PLC CPU.

f) Read Reg. Info. button

Click the button to retrieve the information stored in the target PLC CPU and reuse it in the Forced I/O setting/reset display area.

g) Register button

Click the button to register the forced I/O setting to the device of the PLC CPU specified in "Target name" in "Device test" dialog box.
If any forced I/O setting has been already registered to the target PLC CPU device, it will be overwritten.
Clicking Register and then Close will display "Execution status" dialog box.

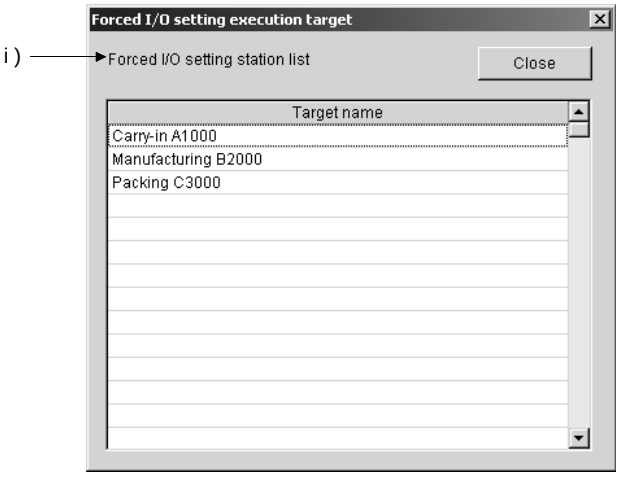
[Description]

The execution status in the forced I/O setting is displayed.

[Setting Item]

h) Display list button

Click the button to display "Forced I/O setting execution target" dialog box. (It can be displayed with "Device" dialog box closed.)



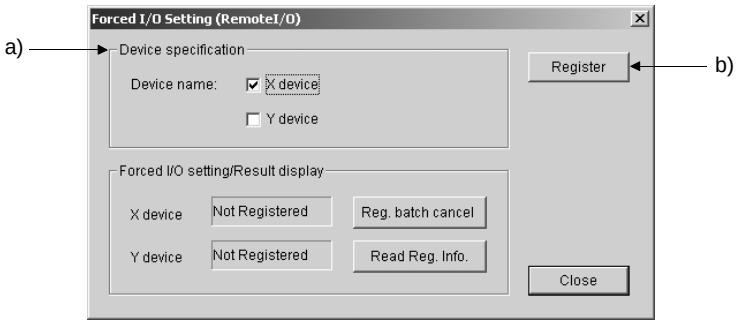
[Setting Item]

i) Forced I/O setting station list

The target names of the stations executing the forced I/O settings are displayed as a list.

[Setting Screen]

(2) When specifying QCPU remote I/O



[Setting Item]

a) Device specification

Specify the device where the forced I/O is executed.

Turning the device ON or OFF is executed in "Device test" dialog box.

b) Register button

Click the button to update the preset forced I/O. After Register is clicked, "Execution status" dialog box is displayed just like in the case of (1) When specifying QCPU (Except for remote I/O).

11 OTHERS

This section explains operations executable from [Tool] or [Help].

11.1 Tool

11.1.1 Customize

11.1.1 (1) Toolbar

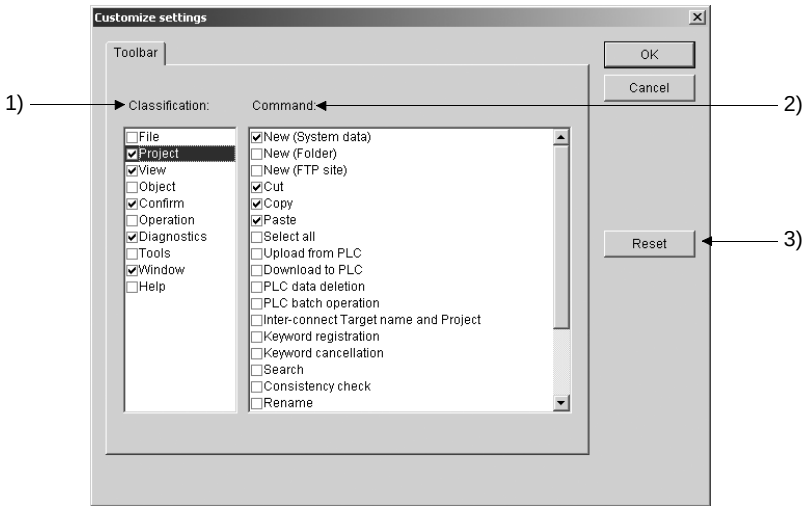
[Purpose]

Set the commands provided for the toolbar to be displayed or hidden.

[Operation Procedure]

[Tool] → [Customize] → [Toolbar]

[Setting Screen]



[Setting Item]

1) Classification

Check desired check boxes to make the items (menu names) displayed on the main screen.

2) Command

A list of commands corresponding to the menu item selected (highlighted) in Classification is displayed.

If a check is marked in the check box left to the classification item (menu name), the check box setting is available in this Command area.

Items check-marked in both Classification and Command are displayed on the toolbar.

3) Reset button

Change the toolbar setting back to the initial state all at once.

11 - 1

11.1.1 (2) Easy menu

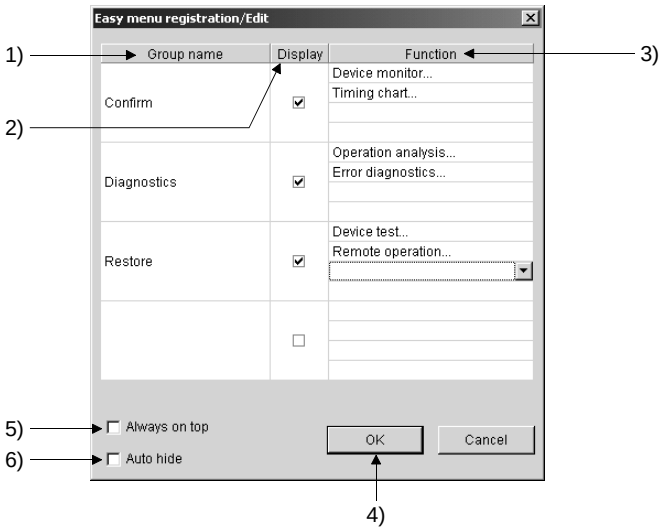
[Purpose]

Register frequently using menu items as an Easy menu to save the trouble of locating a desired function from the menu bar.
Simply select a button and each function can be activated easily.

[Operation Procedure]

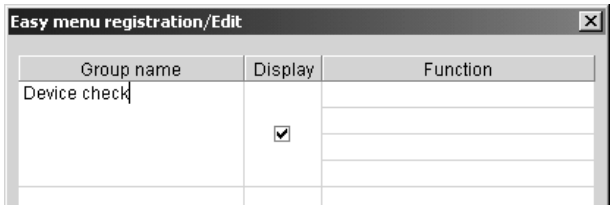
[Tool] → [Customize] → [Easy menu]

[Setting Screen]



[Setting Item]

1) Group name



A group name can be edited within 16 characters and this field can be left as blank. Up to 4 group names can be registered.

2) Display

If a check box is checked, the corresponding function(s) will be displayed as a shortcut menu in area c) of "Easy menu" dialog box.

3) Function

Select any of the following 14 kinds of functions displayed in the combo box:

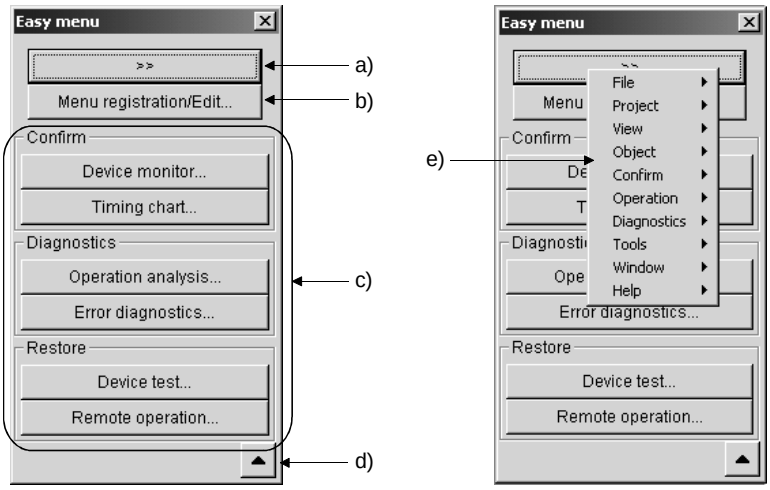
PLC status monitor, Device monitor, Timing chart, Trace, Ladder monitor, Remote operation, Device test, Error diagnostics, Operation analysis, PLC diagnostics, Network diagnostics, CC-Link diagnostics, Ethernet diagnostics and System monitor

Up to 4 functions can be registered to each group.

11 - 2

4) OK button

Click the button to close "Easy menu registration/Edit" dialog box and display the registered/edited “Easy menu” dialog box.



[Setting Item]

a) >> button

Clicking this button displays a menu equivalent to the menu bar e), allowing selection of each function.

b) Menu registration/Edit button

Click the button to display "Easy menu registration/Edit" dialog box.

c) Shortcut menu

Checking a check box in the Display column of "Easy menu registration/Edit" dialog box will display its corresponding functions as shortcut menu items.

d) Changeover button

Clicking "▼" will display all of the preset groups in area c) even if their check boxes are not checked in "Easy menu registration/Edit" dialog box, changing the button to "▲".

The displayed shortcut menu items are all executable.

Clicking "▲" will display only the groups whose check boxes in "Easy menu registration/Edit" are check-marked and the button is changed to "▼".

Note that if all check boxes in "Easy menu registration/Edit" are checked, "▲" is masked and the display changeover is not possible.

5) "Always on top"

If checked, the Easy menu is always displayed on the top.

6) "Auto hide"

If checked, when any window other than "Easy menu" is clicked, "Easy menu" is placed behind the window displaying only its top, bottom, right or left edge.

POINT
The "Easy menu" dialog box can be displayed from [Window] → [Open easy menu].

11 - 3

11.1.2 Option

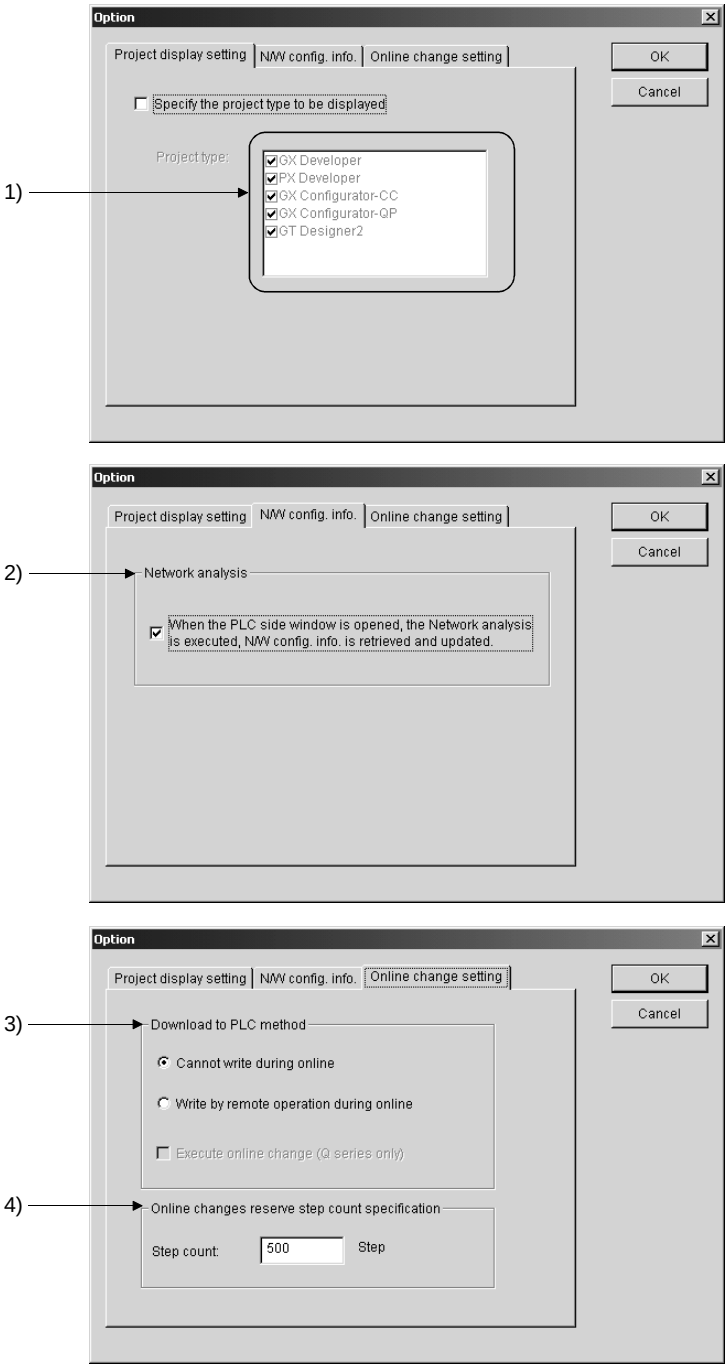
[Purpose]

Change the settings on the project display setting, network configuration information and online change setting.

[Operation Procedure]

[Tool] → [Option]

[Setting Screen]



11 - 4

[Setting Item]

1) Project display setting

Checking "Specify the project type to be displayed" allows the user to specify the project type to be displayed the PC side window.
The following 5 MELSOFT products can be specified for projects and GX Developer must be always specified. The application software related to the selected project can be started.

- GX Developer
- GX Configurator-CC
- GX Configurator-QP
- PX Developer
- GT Designer2

If "Specify the project type to be displayed" is not checked, all of the files are displayed in the personal computer side window.

2) Network analysis

Specify the timing for analyzing the network configuration.
If a check is marked, the network configuration information is retrieved and displayed every time the PLC side window is opened.
If it is not checked, the information updated last is displayed.
When no information exists (at initial start-up), "Not yet retrieved" is displayed.

3) Download to PLC method

Specify whether downloading project data is enabled or not while the target CPU is in RUN status.
When "Write by remote operation during online" has been selected, the CPU is once stopped by the remote operation for data transfer and then returned to RUN status. (Note that online download of data except for parameters is available only for QCPUs.)

4) Online changes reserve step count specification

Set the capacity reserved for PLC program transfer.
This setting is valid for the Q/QnA CPU only.
The initial value is preset to 500 steps.

POINT
For projects created by GX Developer8.00A or later, the online changes reserve step count set on the GX Developer takes precedence. For those created earlier than that, the setting made here is valid.

11 - 5

11.1.3 Security setting

[Purpose]

Specify access-enabled target names, access data names and functions for the user setting name.

Access-disabled target names and access data names are not displayed in each of the functions. Also, an alert is displayed when selecting any access-disabled function in the menu.

[Operation Procedure]

[Tool] → [Security setting]

[Setting Screen]

[Setting Item]

1) <<Target name>>

Select the name of the target to which access is enabled.

All items are enabled (checked) by default.

2) <<Access data name>>

Select the data to which access is enabled.

All items are enabled (checked) by default.

3) <<Function>>

Select the function whose execution is to be enabled.

All items are enabled (checked) by default.

Classification and corresponding commands (functions) are as follows:

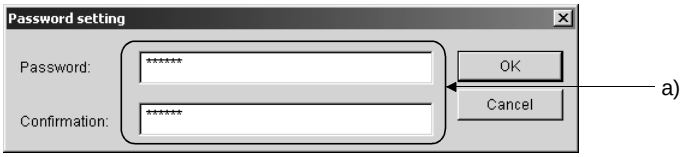
Classification	Command (Function)
File	Create new User setting name, Delete User setting name, Import/Export, Delete Network configuration information
Project	FTP site, Upload from PLC, Download to PLC, PLC data deletion, PLC batch operation, Register Keyword, Delete Keyword, Consistency check, Delete, Backup, Restore, Backup arrangement
Confirm	PLC status monitor, Device monitor, Timing chart, Trace, Ladder monitor, Local device monitor setting
Operation	Remote operation, Device test
Diagnostics	Error diagnostics, Operation analysis, PLC diagnostics, Network diagnostics, CC-Link diagnostics, Ethernet diagnostics, System monitor, Alarm notification

4) Password setting

Use this setting to authenticate the user setting name and to determine if project data can be opened or not.

If "Password protect" is checked, any password can be input.

Clicking Password setting displays "Password setting" dialog box.



[Setting item]

a) Enter a password.

For the password length and valid characters, refer to Section 5.3.

Enter the same password in the Confirmation space.

Once a password has been set, a dialog box asking for the password will appear every time the "Security setting" screen is activated.

5) User setting name input

If this is checked, input of the user setting name will be required on the initial setting screen displayed at GX Explorer startup.

POINT

- During the security setting, is displayed on the main screen's status bar.
- If the user setting name input is check-marked, is displayed in "User setting name specification" dialog box at startup.

11 - 7

11.1.4 Operation log

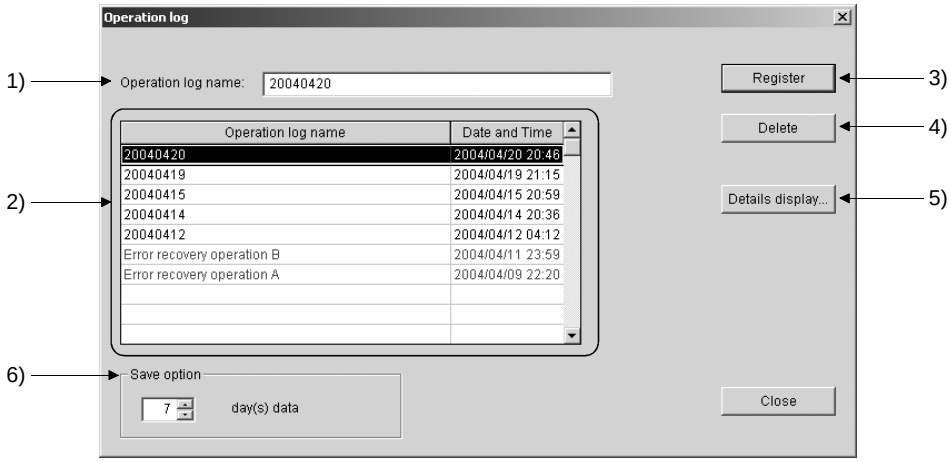
[Purpose]

Collect and store the operation logs (historical data) generated from starting this package software until exiting it.
Logs can be also confirmed at any given time point.

[Operation Procedure]

[Tool] → [Operation log]

[Setting Screen]



[Setting Item]

1) Operation log name

The operation log name of the line selected in the operation log name list is entered. The name can be changed to a desired file name.

2) Operation log name list

A list of the operation log names, dates and times are displayed in reverse chronological order.

3) Register button

Clicking Register after editing the name registers it to the operation log name list.
Giving a descriptive file name to the automatically generated date file will allows users to find individual error or operation details.
For the name length and valid characters, refer to Section 5.3.
The edited operation log names are displayed in blue in distinction from the automatically generated date file names.
Operation logs before editing remain as records.
When a date file that is currently active has been registered, the file stores logs up to the time of registration. However, logs are subsequently stored into the date files.
Up to 1024 logs can be named and registered.

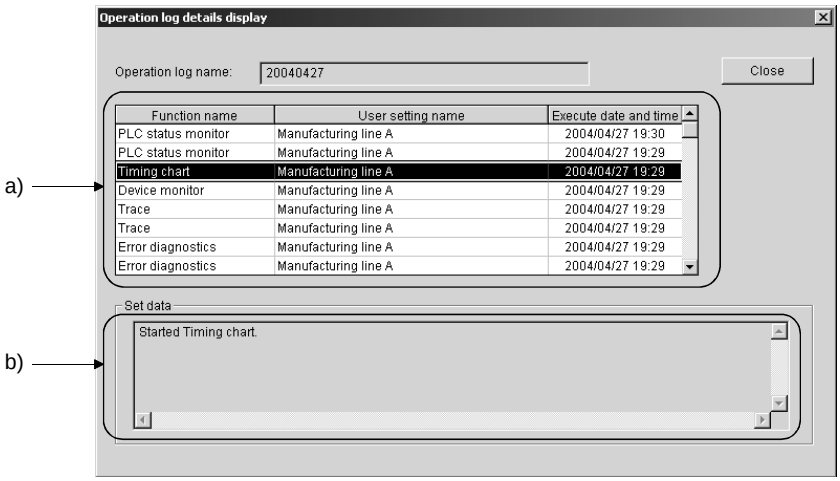
4) Delete button

Clicking this button deletes a log file displayed in "Operation log name" and "Operation log name list".

11 - 8

5) Details display button

"Operation log details display" dialog box is displayed corresponding to the operation log name.



[Setting Item]

a) Operation log details

Details of the operation log shown in "Operation log name" are displayed.

b) Set data

The setting of the line selected in "Operation log details" is displayed.

6) Save option

Specify how long the operation log is to be stored within a range from 1 to 31 days. The default is set to 7 days.

POINT

- Double-clicking the operation log name on "Operation log name" screen displays "Operation log details display" dialog box.
- Operation logs are automatically stored on a per-day basis and the following items in "Operation log details display" dialog box are recorded:
  Function name (Cancelled one is not recorded.)
  User setting name, Execute date and time,
  Set data
- The Save option dose not apply to the registered files with edited names. (They are not automatically deleted.)
- Setting change in the Save option is updated after closing the screen.
- When the PLC diagnostics, Network diagnostics, CC-Link/ CC-Link/LT diagnostics or Ethernet diagnostics has been activated from System monitor, nothing is recorded as operation logs.

11 - 9

11.1.5 Auto-start setting

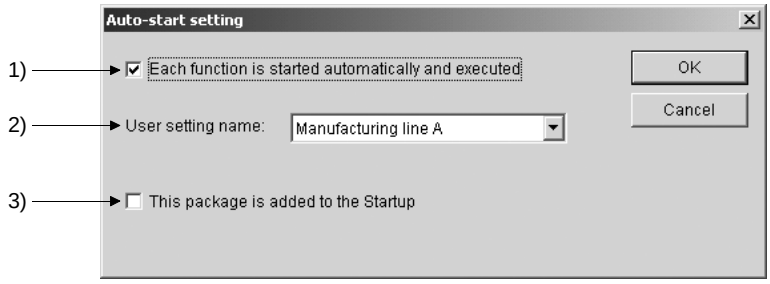
[Purpose]

Automatically start this package software at startup of a personal computer and/or execute each function at startup of this package software.

[Operation Procedure]

[Tool] → [Auto-start setting]

[Setting Screen]



[Setting Item]

1) "Each function is started automatically and executed." check box

The function displayed in the last end state of the specified user setting name (when saving the user setting name) is automatically started.
Available functions are as follows:
PC side window, PLC side window, Device monitor, Timing chart, Ladder monitor, Trace, Error diagnostic (execution screen), Alarm notification (execution screen) and Operation analysis (execution screen)

2) User setting name

Select a user setting name from the combo box to make it automatically start at startup of the package software.
Direct input is not allowed.

3) "This package is added to the Startup." check box

Checking this item creates a shortcut of this package in Windows Startup. This allows automatic start of this package when Windows is started.
When no check is marked for 1), "User setting name specification" dialog box is displayed. Select a desired option.

POINT

If a user setting name has been saved during MELSOFT connection, automatic MELSOFT connection is not possible when GX Explorer is started under the auto-start setting next time.
To connect to MELSOFT, retry from [Object] – [MELSOFT connection].

11.2 Help

In "Help", a part of information contained in this manual and relevant PLC CPU manuals are stored.
The information can be checked on-screen during GX Explorer operation.
The Help menu and its description are shown below.

Help menu	Description
Help	Displays GX Explorer instructions.
Key operation list	Displays a list of shortcut keys to GX Explorer menu.
PLC Error	Displays error codes given in relevant CPU users manuals. Error codes read by PLC diagnostics can be checked on a personal computer.
Special relay/Register	Special relays and registers are described with functions and device No. They can be confirmed when programming or during monitoring.
Product Information	Displays product information such as GX Explorer's version.
Connect to MELFANS web	Connects to MELFANSweb. Information such as technical bulletins (valid models) can be viewed and checked.

11 - 11

12 ERROR MESSAGES FOR MELSOFT CONNECTION

This section provides error codes, descriptions and actions to be taken when the following error message is displayed during MELSOFT connection:

(Message displayed)

MELSOFT connection failed. Please check the following error codes by the manual.
Error=xxxxxxxx

Error code	Description	Action to be taken
0x1000F001	Failed to make the authentication setting on the server side.	• Restart a server with GX RemoteService-I installed. Or, Reinstall GX RemoteService-I.
0x1000F002	Failed to write the authentication setting on the server side.	
0x1000F003	Failed to read the authentication setting on the server side.	
0x1000F011	Unable to receive the response to the request.	• Network traffic is congested. Wait for a while and retry MELSOFT connection.
0x1000F012	Failed in data communication.	
0x1000F013	Unable to identify the specified server.	• Check if the specified IP address (host name) and port No. are correct. • Check if a server with GX RemoteService-I installed and the Web server module are active.
0x1000F014	The specified server name is invalid.	
0x1000F015	Unable to access the specified server.	• Check the network setting of a server with GX RemoteService-I installed and the Web server module, and the network and security settings of GX RemoteService-I. • Check the specifications of the network connected on the server side to see if GX RemoteService-I can be used. (For details, consult your service provider and/or network administrator.)
0x1000F017	The number of clients connectable to the server exceeded the limit.	• Stop MELSOFT connection from other personal computer and reduce the number of connections to the server.
0x1000F304	Received a command that cannot be handled on the GX RemoteService-I side.	Use the latest version of GX RemoteService-I.
0x1000F703	Unable to connect to the specified server.	• Check if the specified IP address (host name) and port No. are correct. • Check if a server with GX RemoteService-I installed and the Web server module are active. • When using the Proxy server and/or DNS server, check if each server is active. (For details, consult your network administrator.)
0x1000F708	Failed to acquire the host name.	• Check if the host name is assigned correctly. (For details, consult your network administrator.)

(Continued to the next page)

12 - 1

(From the previous page)

Error code	Description	Action to be taken
0x1000F709	Failed to acquire the server address.	• Check if the specified IP address (host name) and port No. are correct. • Check if a server with GX RemoteService-I installed and the Web server module are active. • When using the Proxy server and/or DNS server, check if each server is active. (For details, consult your network administrator.)
0x1000F70C	Failed to acquire the data received from the GX RemoteService-I side. (No response)	An error may have occurred in connections or communications with the personal computer with GX RemoteService-I installed and the Web server module side. Check the following and retry. • Check if the lines on the server or client side are linked, or if communication errors have occurred frequently or not. • Check if the personal computer and Web server module are running. Especially, if the PLC CPU is powered off or reset when using the Web server module, it may take time to start the Web server module. • Check if the automatic line disconnection setting has been made in the GX RemoteService-I side setting or not. When it is set, increase the time value for the setting. • When using a router or other network devices, if "No connection time setting"*1 is enabled, disable it or increase the set time value. *1 "No connection time setting" is the function by which the connection is automatically closed if no communications are made for a given length of time. • When using a router or other network devices, if the line connections are restricted by the time or data amount, disable the restriction or increase the set time or set data amount.
0x1000FC03	• An HTTP error has occurred. • An timeout error of the Proxy server has occurred. • Although the Proxy server is not passed through, "Use a proxy server" is set in the Advance LAN settings.	• Check if a server with GX RemoteService-I installed and the Web server module are active. • When using a Proxy server, increase the timeout time of the Proxy server. • Uncheck "Use a proxy server" in the Advanced LAN settings of GX Explorer. [Object] – [Connect to MELSOFT] – Connection type – LAN connection – Advanced (For details, consult your network administrator.)
0x1000FFFF	Other network error has occurred.	• Wait for a while and retry.

12 - 2

APPENDICES

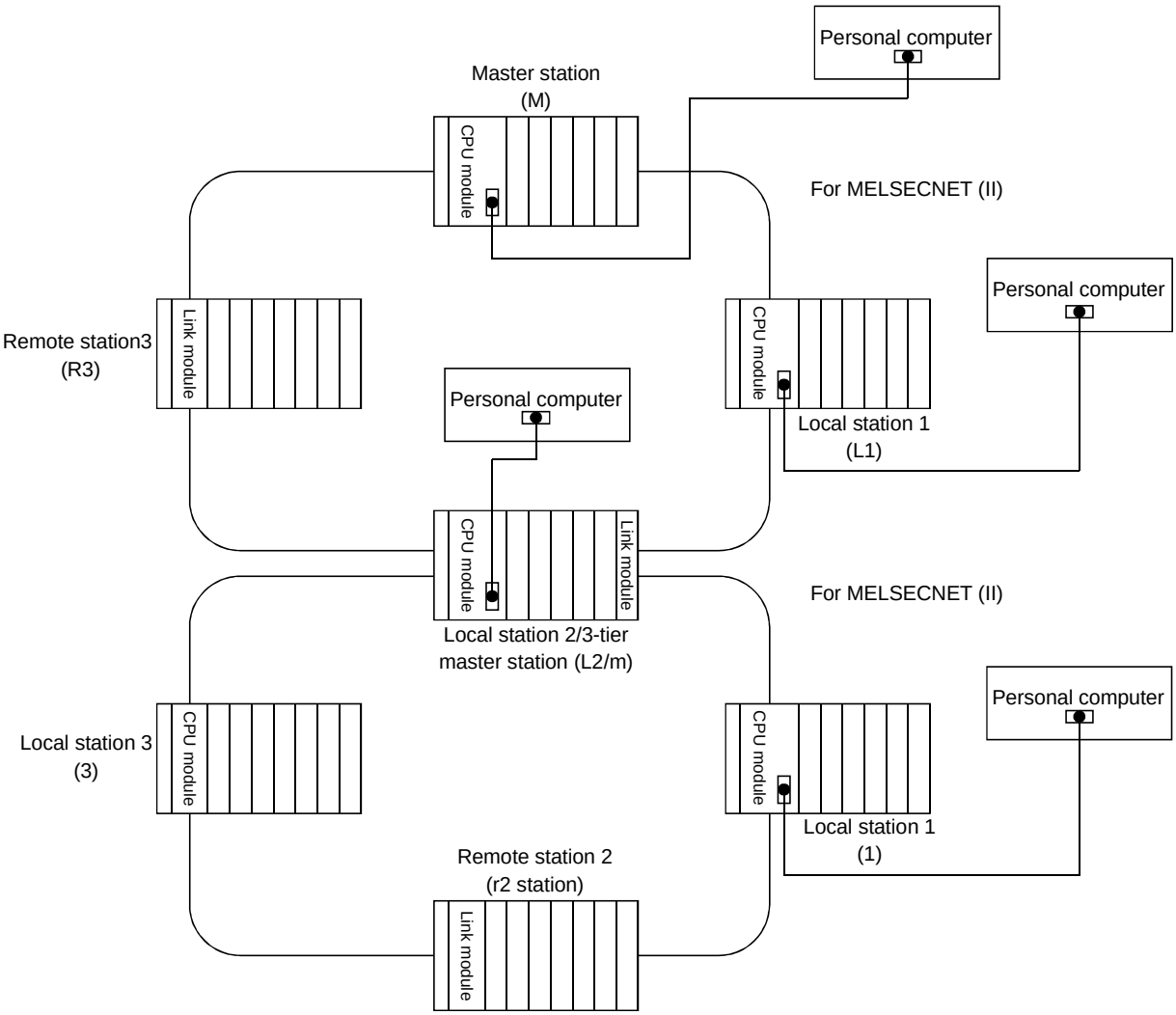
Appendix 1 Access Ranges in MELSECNET(II/10/H) Systems

This section explains applicable access ranges when a PLC CPU is specified as a target name.

1.1 Access Range in MELSECNET (II)

A	Q/QnA	FX
○	○	×

[PLC No. Designation Example]
For MELSECNET (II), MELSECNET/B:



Appendix - 1

Designated PLC number

Personal computer-connected Station	PLC Accessed by Personal computer						
	M	L1	L2/m	R3	I1	r2	I3
M	○	○	○	×	×	×	×
L1	○	○	×	×	×	×	×
L2/m	○	×	○	×	○	×	○
R3	○	×	×	×	×	×	×
I1	×	×	○	×	○	×	×
r2	×	×	○	×	×	×	×
I3	×	×	○	×	×	×	○

○: Designating the PLC number (station number) of the relevant programmable controller allows access to all devices.

POINT

Even if any tier in the figure above is MELSECNET/B, the designated numbers are the same.

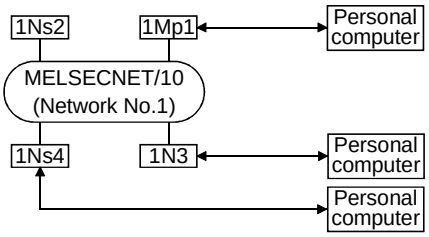
Appendix - 2

1.2 Access Range for A series Start

A	Q/QnA	FX
○	○	×

For PLC to PLC network

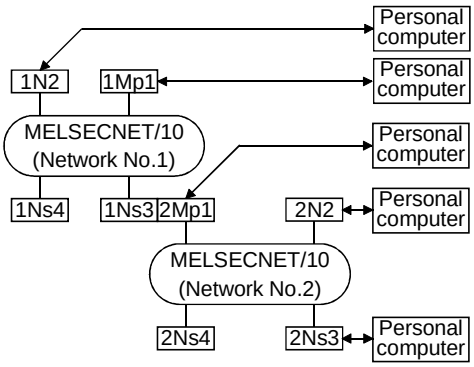
- When using a MELSECNET/10 2-tier system:



Personal computer-connected station	Station Accessible from Personal computer			
	1Mp1	1Ns2	1N3	1Ns4
1Mp1	FF	1-2	1-3	1-4
1N3	1-1	×	FF	×
1Ns4	1-1	1-2	1-3	FF

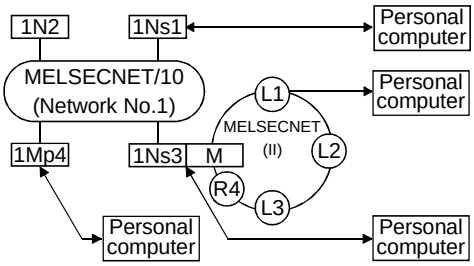
[MELSECNET/10
PLC to PLC network]
Mp station...Control station
Ns station...Normal station (AnUCPU)
N station.....Normal station
(CPUs excluding AnU (AnA/AnNCPU)
[MELSECNET (II)]
M station.....Master station
L station.....Local station
R station.....Remote station
FF: Host station

- When using a MELSECNET/10 multi-tier system:



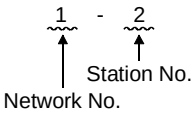
Personal computer-connected Station	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/2Mp1	1Ns4	2N2	2Ns3	2Ns4
1Mp1	FF	1-2	1-3	1-4	2-2	2-3	2-4
1N2	1-2	FF	×	×	×	×	×
1Ns3/ 2Mp1	1-1	1-2	FF	1-4	2-2	2-3	2-4
2N2	×	×	2-1	×	FF	×	×
2Ns3	1-1	1-2	2-1	1-4	2-2	2-3	FF

- When using a MELSECNET/10 / MELSECNET(II) composite system:

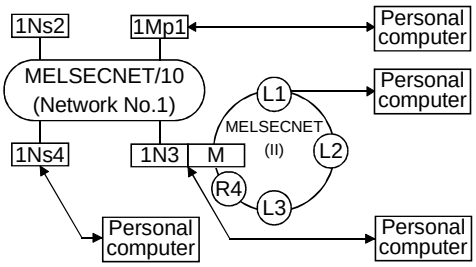


Personal computer-connected Station	Station Accessible from Personal computer							
	1Ns1	1N2	1Ns3/M	1Mp4	L1	L2	L3	R4
1Ns1	FF	1-2	1-3	1-4	×	×	×	×
1Ns3/M	1-1	1-2	FF	1-4	1	2	3	×
1Mp4	1-1	1-2	1-3	FF	×	×	×	×
L1	×	×	0	×	FF	×	×	×

"Station accessible from Personal computer" in the tables:
<Example>



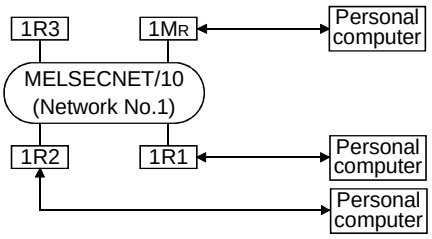
- When using an AnA/AnNCPU as an intermediate station:



Personal computer-connected station	Station Accessible from Personal computer							
	1Mp1	1Ns2	1N3/M	1Ns4	L1	L2	L3	R4
1Mp1	FF	1-2	1-3	1-4	×	×	×	×
1N3/M	1-1	×	1-3	×	1	2	3	×
1Ns4	1-1	1-2	1-3	FF	×	×	×	×
L1	×	×	0	×	FF	×	×	×

For remote I/O network

- When using a MELSECNET/10 2-tier system:



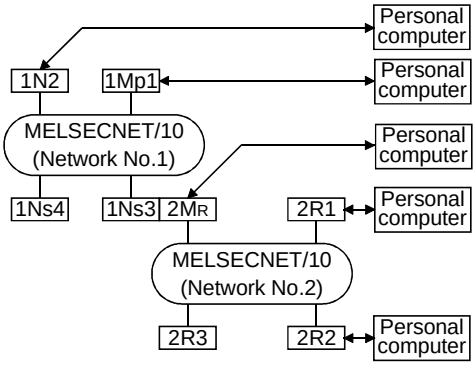
Personal computer-connected Station	Station Accessible from Personal computer			
	$1M_R$	1R1	1R2	1R3
$1M_R$	FF	×	×	×
1R1	0	×	×	×
1R2	0	×	×	×

[MELSECNET/10 PLC to PLC network]
Mp station....Control station
Ns station....Normal station (AnUCPU)
N station.....Normal station (CPUs excluding AnU (AnA/AnNCPU)

[MELSECNET/10 Remote I/O network]
MR station...Master station (AnUCPU)
R station.....Remote station

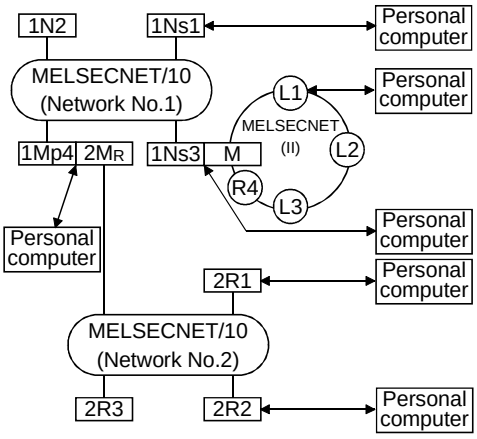
[MELSECNET (II)]
M station.....Master station
L station.....Local station
R station.....Remote station
FF: Host station

- When using a MELSECNET/10 multi-tier system:

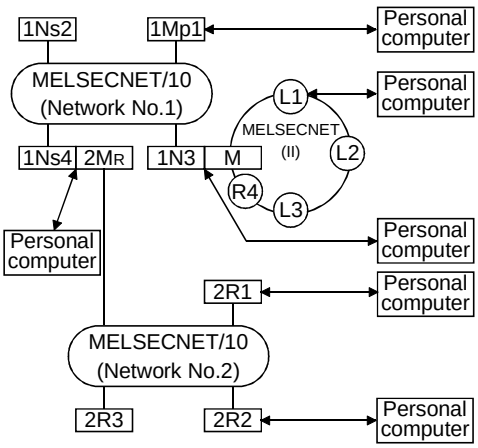


Personal computer-connected Station	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/ $2M_R$	1Ns4	2R1	2R2	2R3
1Mp1	FF	1-2	1-3	1-4	×	×	×
1N2	×	FF	×	×	×	×	×
1Ns3/$2M_R$	1-1	1-2	FF	1-4	×	×	×
2R1	1-1	1-2	0	1-4	×	×	×
2R2	1-1	1-2	0	1-4	×	×	×

- When using a MELSECNET/10, MELSECNET (II) composite system:



Personal computer-connected Station	Station Accessible from Personal computer										
	1Ns1	1N2	1Ns3/ M	1Mp4/ $2M_R$	2R1	2R2	2R3	L1	L2	L3	R4
1Ns1	FF	1-2	1-3	1-4	×	×	×	×	×	×	×
1Ns3/M	1-1	1-2	FF	1-4	×	×	×	1	2	3	×
1Mp4/ $2M_R$	1-1	1-2	1-3	FF	×	×	×	×	×	×	×
2R1	1-1	1-2	1-3	0	×	×	×	×	×	×	×
2R2	1-1	1-2	1-3	0	×	×	×	×	×	×	×
L1	×	×	0	×	×	×	×	FF	×	×	×



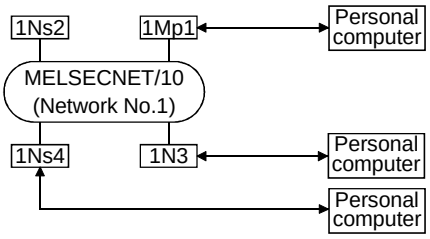
Personal computer-connected Station	Station Accessible from Personal computer										
	1Mp1	1Ns2	1N3/ M	1Ns4/ $2M_R$	2R1	2R2	2R3	L1	L2	L3	R4
1Mp1	FF	1-2	1-3	1-4	×	×	×	×	×	×	×
1N3/M	×	×	FF	×	×	×	×	1	2	3	×
1Ns4/ $2M_R$	1-1	1-2	1-3	FF	×	×	×	×	×	×	×
2R1	1-1	1-2	1-3	0	×	×	×	×	×	×	×
2R2	1-1	1-2	1-3	0	×	×	×	×	×	×	×
L1	×	×	0	×	×	×	×	FF	×	×	×

1.3 Access Range for QnA series Start

A	Q/QnA	FX
×	○	×

For MELSECNET/10 PLC to PLC network

- When using a MELSECNET/10 2-tier system:



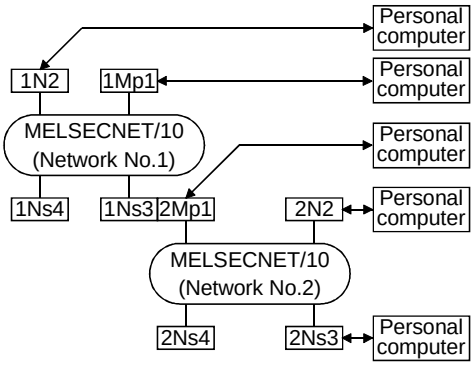
Designated PLC number

Personal computer-connected Station	Station Accessible from Personal computer			
	1Mp1	1Ns2	1N3	1Ns4
1Mp1	FF	1-2	×	1-4
1N3	×	×	×	×
1Ns4	1-1	1-2	×	FF

× : Access not possible

Mp station...Control station
Ns station...Normal station (QnACPU)
N station.....Normal station (CPUs excluding QnA (AnU/AnA/AnNCPU))
In the figure to the right, the first digit for each station indicates the network number and the final line indicates the station number.
FF: Host station

- When using a MELSECNET/10 multi-tier system:

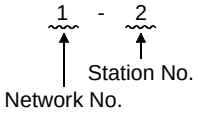


Designated PLC number

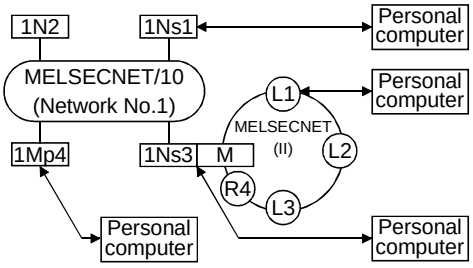
Personal computer-connected Station	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/ 2Mp1	1Ns4	2N2	2Ns3	2Ns4
1Mp1	FF	×	1-3	1-4	×	2-3	2-4
1N2	×	×	×	×	×	×	×
1Ns3/ 2Mp1	1-1	×	FF	1-4	×	2-3	2-4
2N2	×	×	×	×	×	×	×
2Ns3	1-1	×	2-1	1-4	×	FF	2-4

× : Access not possible

"Station accessible from Personal computer" in the tables:
<Example>



- When using a MELSECNET/10, MELSECNET (II) composite system:
(Intermediate station: QnACPU)

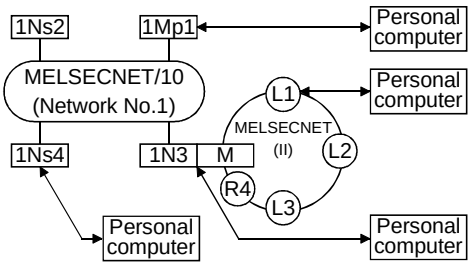


Designated PLC number

Personal computer-connected Station	Station Accessible from Personal computer							
	1Ns1	1N2	1Ns3/ M	1Mp4	L1	L2	L3	R4
1Ns1	FF	×	1-3	1-4	×	×	×	×
1Ns3/M	1-1	×	FF	1-4	1	2	3	×
1Mp4	1-1	×	1-3	FF	×	×	×	×
L1	×	×	0	×	FF	×	×	×

× : Access not possible

(Intermediate station: AnU/AnA/AnNCPU)



Designated PLC number

Personal computer-connected Station	Station Accessible from Personal computer							
	1Mp1	1Ns2	1N3/ M	1Ns4	L1	L2	L3	R4
1Mp1	FF	1-2	×	1-4	×	×	×	×
1N3/M	×	×	×	×	×	×	×	×
1Ns4	1-1	1-2	×	FF	×	×	×	×
L1	×	×	×	×	FF	×	×	×

× : Access not possible

Appendix - 5

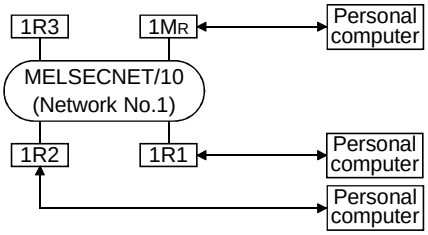
POINT

To access a PLC in another station, routing parameters must be set by using the Personal computer function.
For details on setting network parameters, refer to the "online" manual.
For details of the network parameters themselves, refer to the MELSECNET/10 Network System Reference Manual.

Appendix - 6

For MELSECNET/10 remote I/O network

- When using a MELSECNET/10 2-tier system



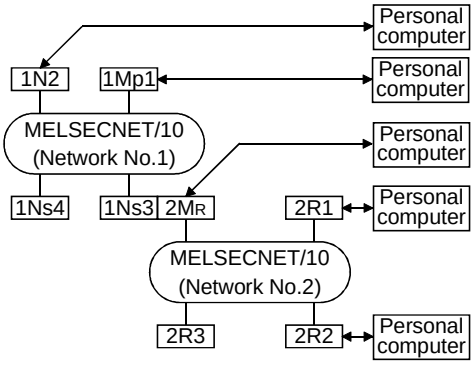
Designated PLC number

Personal computer-connected Station	Station Accessible from Personal computer			
	1MR	1R1	1R2	1R3
1MR	FF	×	×	×
1R1	0	×	×	×
1R2	0	×	×	×

×: Access not possible

*1: 1. The following devices of a remote I/O station connected to GX Explorer can be monitored : X, Y, B, W.
2. Ladder monitor, status monitoring (in remote I/O stations connected to GX Explorer, the CPU connected to the master station can be monitored).
3. Loop test, setting confirmation test, station order confirmation test, communication test (testing with a remote station treated as the host station is possible).

- When using a MELECNET/10 multi-tier system:

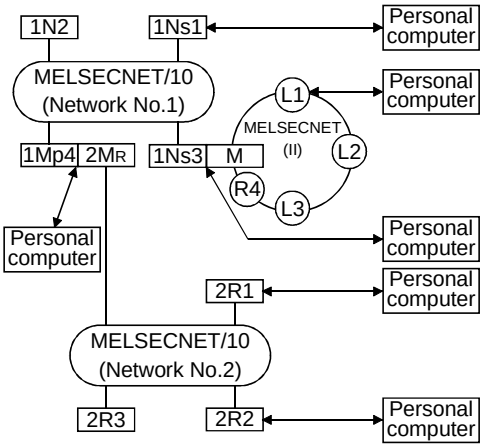


Designated PLC number

Personal computer-connected Station	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/ 2MR	1Ns4	2R1	2R2	2R3
1Mp1	FF	×	1-3	1-4	×	×	×
1N2	×	×	×	×	×	×	×
1Ns3/ 2MR	1-1	×	FF	1-4	×	×	×
2R1	1-1	×	1-3	1-4	×	×	×
2R2	1-1	×	0	1-4	×	×	×

×: Access not possible

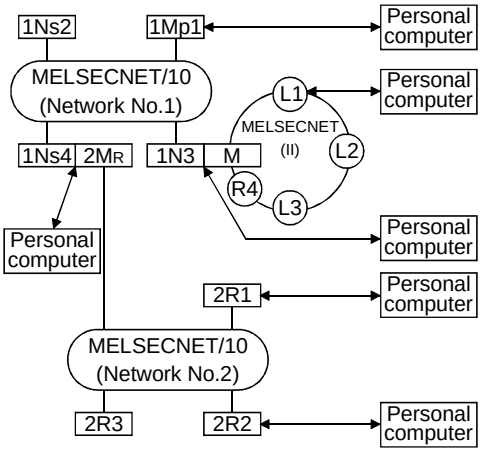
- When using a MELSECNET/10, MELSECNET (II) composite system:



Designated PLC number

Personal computer-connected Station	Station Accessible from Personal computer										
	1Ns1	1N2	1Ns3/ M	1Mp4/ 2MR	2R1	2R2	2R3	L1	L2	L3	R4
1Ns1	FF	×	1-3	1-4	×	×	×	×	×	×	×
1Ns3/M	1-1	×	FF	1-4	×	×	×	1	2	3	×
1Mp4/ 2MR	1-1	×	1-3	FF	×	×	×	×	×	×	×
2R1	1-1	×	1-3	0	×	×	×	×	×	×	×
2R2	1-1	×	1-3	0	×	×	×	×	×	×	×
L1	×	×	0	×	×	×	×	FF	×	×	×

×: Access not possible



Designated PLC number

Personal computer-connected Station	Station Accessible from Personal computer										
	1Mp1	1Ns2	1N3/ M	1Ns4/ 2MR	2R1	2R2	2R3	L1	L2	L3	R4
1Mp1	FF	1-2	×	1-4	×	×	×	×	×	×	×
1N3/M	×	×	×	×	×	×	×	×	×	×	×
1Ns4/ 2MR	1-1	1-2	×	FF	×	×	×	×	×	×	×
2R1	1-1	1-2	×	0	×	×	×	×	×	×	×
2R2	1-1	1-2	×	0	×	×	×	×	×	×	×
L1	×	×	0	×	×	×	×	FF	×	×	×

×: Access not possible

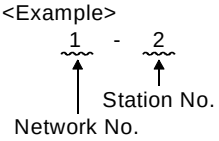
[MELSECNET/10 PLC to PLC network]
Mp station....Control station
Ns station....Normal station (QnACPU)
N station.....Normal station (CPUs excluding QnA (AnU/AnA/AnNCPU))

[MELSECNET/10 Remote I/O network]
MR station...Master station (QnACPU)
R station.....Remote station

[MELSECNET (II)]
M station.....Master station
L station.....Local station
R station.....Remote station

In the figure to the right, the first digit for each station indicates the network number and the final line indicates the station number.
However, the station number of MR (master station) is not shown because it is "0".
FF: Host station

"Station accessible from Personal computer" in the tables:
<Example>



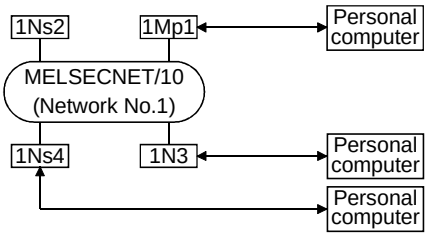
Appendix - 7

1.4 Access Range for Q series Start

A	Q/QnA	FX
×	○	×

For inter-PLC network of MELSECNET/10

- MELSECNET/10 two-tier system:



PLC numbers to be specified

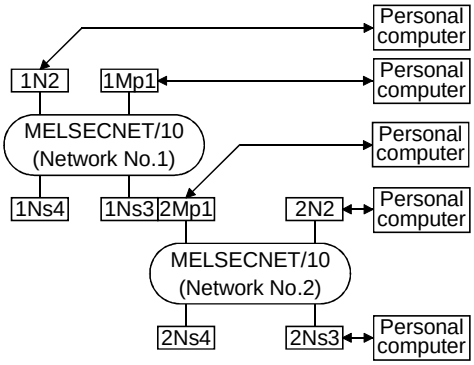
Personal computer Connection Station	Station Accessible from Personal computer			
	1Mp1	1Ns2	1N3	1Ns4
1Mp1	FF	1-2	×	1-4
1N3	×	×	×	×
1Ns4	1-1	1-2	×	FF

× : Access not possible

Mp station...Control station
Ns station...Normal station (QCPU)
N station.....Ordinary station (CPU except Q/QnA (QCPU- A, AnU, AnA, AnNCPU)

The first digit of each station shown on the right indicates the network number, and the last digit the station number.

- MELSECNET/10 multi-tier system:

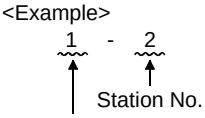


PLC numbers to be specified

Personal computer-connected Station	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/ 2Mp1	1Ns4	2N2	2Ns3	2Ns4
1Mp1	FF	×	1-3	1-4	×	2-3	2-4
1N2	×	×	×	×	×	×	×
1Ns3/ 2Mp1	1-1	×	FF	1-4	×	2-3	2-4
2N2	×	×	×	×	×	×	×
2Ns3	1-1	×	2-1	1-4	×	FF	2-4

× : Access not possible

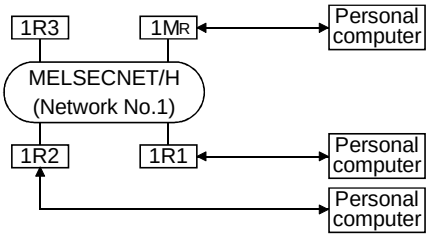
"Station accessible from Personal computer" in the tables:
<Example>



Appendix - 8

For remote I/O network of MELSECNET/H

- MELSECNET/H two-tier system



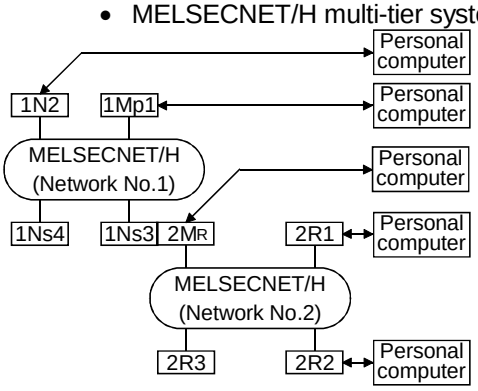
PLC numbers to be specified

Personal computer-connected Station	Station Accessible from Personal computer			
	1MR	1R1	1R2	1R3
1MR	FF	1-1	1-2	1-3
1R1	0	FF	1-2	1-3
1R2	0	1-1	FF	1-3

×: Access not possible

*1: 1. The devices X, Y, B and W of the remote I/O station connected with GX Explorer can be monitored.
2. Line monitoring
3. Loop test, setting check test, station order check test, communication test (test can be made when remote station is connected to own station)

- MELSECNET/H multi-tier system



PLC numbers to be specified

Personal computer-connected Station	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/ 2MR	1Ns4	2R1	2R2	2R3
1Mp1	FF	×	1-3	1-4	2-1	2-2	2-3
1N2	×	×	×	×	×	×	×
1Ns3/ 2MR	1-1	×	FF	1-4	2-1	2-2	2-3
2R1	1-1	×	0	1-4	FF	2-2	2-3
2R2	1-1	×	0	1-4	2-1	FF	2-3

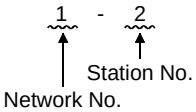
×: Access not possible

[MELSECNET/10 inter-PLC network]
Mp station....Control station
Ns station....Ordinary station
(QCPU (Q mode))
N station.....Ordinary station
(CPU except Q/QnA (AnU/AnA/AnNCPU))

[MELSECNET/10 remote I/O network]
MR station...Master station
(QCPU (Q mode))
R station.....Remote station

The first digit of each station in the network area indicated on the right denotes the network number, and the last digit the station number.
However, the station number of MR (master station) is not given since it is 0.

"Station accessible from Personal computer" in the tables:
<Example>



Appendix 2 MELSECNET/10, MELSECNET/H Board Access Ranges

2.1 MELSECNET/10 Board, MELSECNET/H Board

A	Q/QnA	FX
○	○	×

When using a MELSECNET/10 board, confirm the MELSECNET board model names and driver versions indicated below.

	Board	Driver
MELSECNET board for PC/AT	A70BDE-J71QLP23 (Optical loop) A70BDE-J71LP23GE A70BDE-J71QBR13 (Coaxial bus) A70BDE-J71QLR23 (Coaxial loop)	SW3DNF-MNET10

When using a MELSECNET/10 board, confirm the MELSECNET board model names and driver versions indicated below.

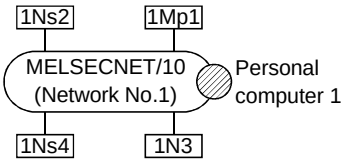
	Board	Driver
MELSECNET board for PC/AT	Q80BD-J71BR11 (Coaxial loop) Q80BD-J71LP21-25 (Optical loop) Q80BD-J71LP21G (Optical loop) Q80BD-J71LP21GE (Optical loop)	SW0DNC-MNETTH-B

2.1.1 A series start

A	Q/QnA	FX
○	×	×

For MELSECNET/10 PLC-to-PLC network

- When using a MELSECNET/10 2-tier system:



Designated PLC number

	Station Accessible from Personal computer			
	1Mp1	1Ns2	1N3	1Ns4
Personal computer 1	1-1	1-2	1-3	1-4

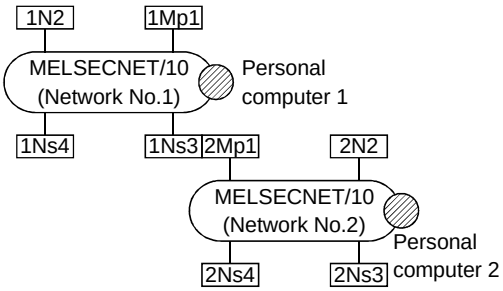
×: Access not possible

Mp station...Control station
Ns station...Normal station (AnUCPU)
N station.....Normal station

(CPUs excluding AnU (AnA/AnNCPU))

Peripheral devices 1 and 2 are peripheral devices that incorporate a MELSECNET/10 board.
In the figure to the right, the first digit for each station indicates the network number and the final line indicates the station number.

- When using a MELSECNET/10 multi-tier system:

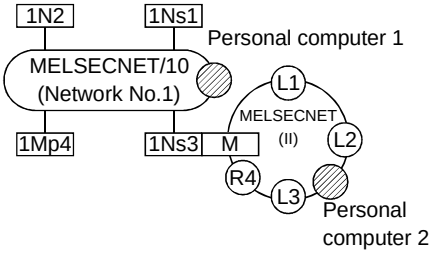


Designated PLC number

	Station Accessible from Personal computer								
	1Mp1	1N2	1Ns3/ 2Mp1	Personal computer 1	1Ns4	2N2	2Ns3	2Ns4	Personal computer 2
Personal computer 1	1-1	1-2	1-3	×	1-4	2-2	2-3	2-4	×
Personal computer 2	1-1	1-2	1-3	×	1-4	2-2	2-3	2-4	×

×: Access not possible

- When using a MELSECNET/10 / MELSECNET (II) composite system:

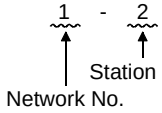


Designated PLC number

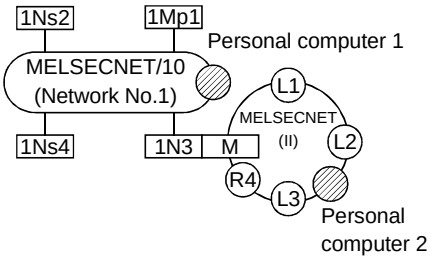
	Station Accessible from Personal computer								
	1Mp1	1N2	1Ns3/2 Mp1	1Ns4	Personal computer 1	L1	L2	R4	Personal computer 2
Personal computer 1	1-1	1-2	1-3	1-4	×	×	×	×	×
Personal computer 2	×	×	×	×	×	×	×	×	×

×: Access not possible

"Station accessible from Personal computer" in the tables:
<Example>



(Intermediate station: AnA/AnNCPU)



Designated PLC number

	Station Accessible from Personal computer								
	1Mp1	1N2	1N3/ 2Mp1	1Ns4	Personal computer 1	L1	L2	R4	Personal computer 2
Personal computer 1	1-1	1-2	1-3	1-4	×	×	×	×	×
Personal computer 2	×	×	×	×	×	×	×	×	×

×: Access not possible

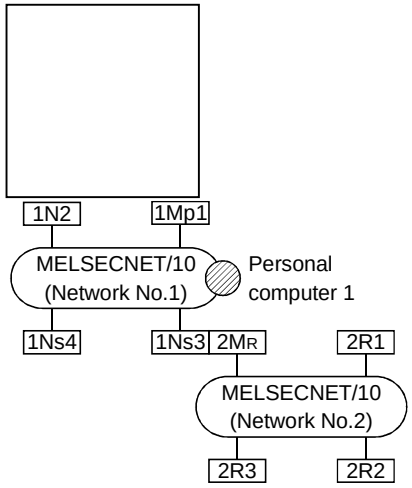
POINT

To access a PLC in another station, routing parameters must be set by using the GX Developer.
For details of the network parameters themselves, refer to the MELSECNET/10 Network System Reference Manual.

Appendix - 11

For MELSECNET/10 remote I/O network

- When using a MELSECNET/10 multi-tier system:

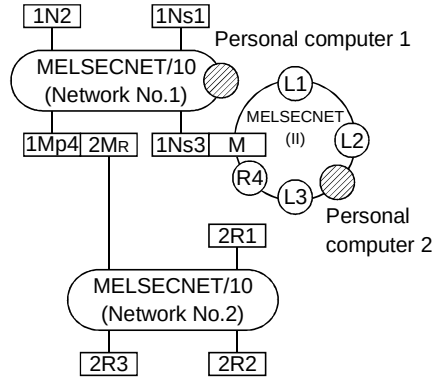


Designated PLC number

	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/ 2MR	1Ns4	2R1	2R2	2R3
Personal computer 1	1-1	1-2	1-3	1-4	×	×	×

×: Access not possible

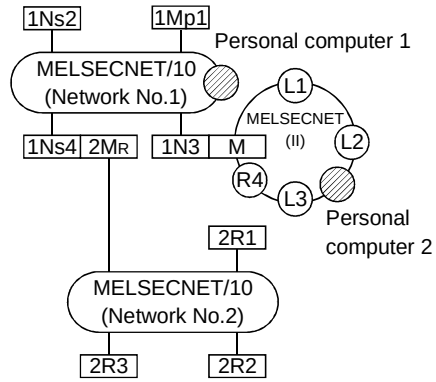
- MELSECNET/10 /MELSECNET (II) composite system



Designated PLC number

	Station Accessible from Personal computer										
	1Ns1	1N2	1Ns3/ M	1Mp4/ 2MR	2R1	2R2	2R3	L1	L2	L3	R4
Personal computer 1	1-1	1-2	1-3	1-4	×	×	×	×	×	×	×
Personal computer 2	×	×	×	×	×	×	×	×	×	×	×

×: Access not possible



Designated PLC number

	Station Accessible from Personal computer										
	1Mp1	1Ns2	1N3/M	1Ns4/ 2MR	2R1	2R2	2R3	L1	L2	L3	R4
Personal computer 1	1-1	1-2	1-3	1-4	×	×	×	×	×	×	×
Personal computer 2	×	×	×	×	×	×	×	×	×	×	×

×: Access not possible

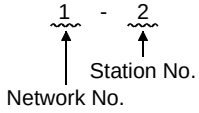
[MELSECNET/10 PLC to PLC network]
Mp station....Control station
Ns station....Normal station (AnUCPU)
N station.....Normal station
(CPUs excluding AnU (AnA/AnNCPU))

[MELSECNET/10 Remote I/O network]
MR station...Master station (AnUCPU)
R station.....Remote station

[MELSECNET (II)]
M station.....Master station
L station.....Local station
R station.....Remote station

Peripheral devices 1 and 2 are peripheral devices that incorporate a MELSECNET/10 board.
In the figure to the right, the first digit for each station indicates the network number and the final line indicates the station number.
However, the station number of MR (master station) is not shown because it is "0".

"Station accessible from Personal computer" in the tables:
<Example>



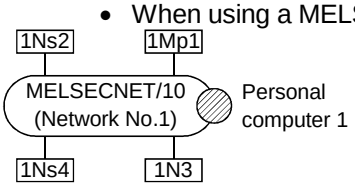
Appendix - 12

2.1.2 QnA series start

A	Q/QnA	FX
×	○	×

For MELSECNET/10 PLC-to-PLC network

- When using a MELSECNET/10 2-tier system:



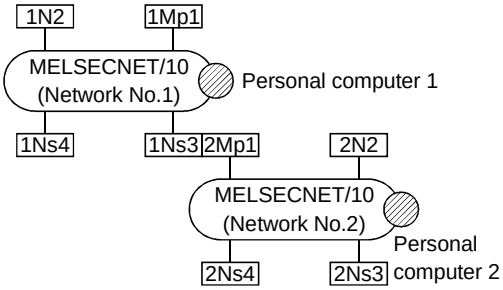
Designated PLC number

	Station Accessible from Personal computer			
	1Mp1	1Ns2	1N3	1Ns4
Personal computer 1	1-1	1-2	×	1-4

×: Access not possible

Mp station...Control station
Ns station...Normal station (QnACPU)
N station.....Normal station
(CPUs excluding AnU (AnU/AnA/AnNCPU))
Peripheral devices 1 and 2 are peripheral devices that incorporate a MELSECNET/10 board.
In the figure to the right, the first digit for each station indicates the network number and the final line indicates the station number.

- When using a MELSECNET/10 multi-tier system:

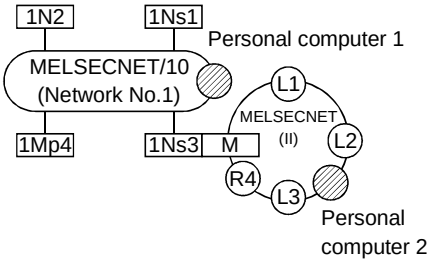


Designated PLC number

	Station Accessible from Personal computer								
	1Mp1	1N2	1Ns3/ 2Mp1	Personal computer 1	1Ns4	2N2	2Ns3	2Ns4	Personal computer 2
Personal computer 1	1-1	×	1-3	×	1-4	×	2-3	2-4	×
Personal computer 2	1-1	×	1-3	×	1-4	×	2-3	2-4	×

×: Access not possible

- When using a MELSECNET/10 / MELSECNET (II) composite system:
  (Inter mediate station: QnACPU)

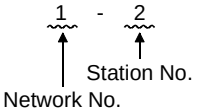


Designated PLC number

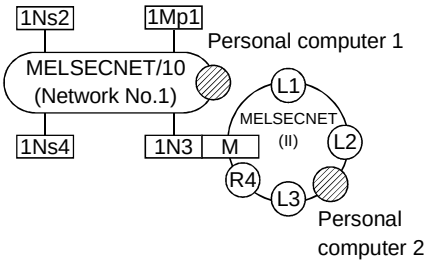
	Station Accessible from Personal computer								
	1Mp1	1N2	1Ns3/2 Mp1	1Ns4	Personal computer 1	L1	L2	R4	Personal computer 2
Personal computer 1	1-1	×	1-3	1-4	×	×	×	×	×
Personal computer 2	×	×	×	×	×	×	×	×	×

×: Access not possible

"Station accessible from Personal computer" in the tables:
<Example>



(Intermediate station: AnU/AnA/AnNCPU)



Designated PLC number

	Station Accessible from Personal computer								
	1Mp1	1Ns2	1N3/ 2Mp1	1Ns4	Personal computer 1	L1	L2	R4	Personal computer 2
Personal computer 1	1-1	1-2	×	1-4	×	×	×	×	×
Personal computer 2	×	×	×	×	×	×	×	×	×

×: Access not possible

POINT

To access a PLC in another station, routing parameters must be set by using the GX Explorer.
For details of the network parameters themselves, refer to the MELSECNET/10 Network System Reference Manual.

For MELSECNET/10 remote I/O network

- When using a MELSECNET/10 multi-tier system:

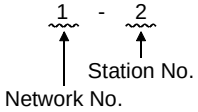
[MELSECNET/10 PLC to PLC network]
Mp station....Control station
Ns station....Normal station (QnACPU)
N station.....Normal station
(CPUs excluding QnA (AnU/AnA/AnNCPU))

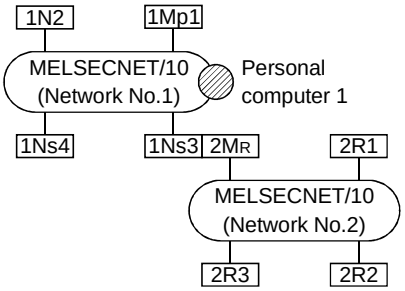
[MELSECNET/10 Remote I/O network]
MR station...Master station (QnACPU)
R station.....Remote station

[MELSECNET (II)]
M station.....Master station
L station.....Local station
R station.....Remote station

Peripheral devices 1 and 2 are peripheral devices that incorporate a MELSECNET/10 board.
In the figure to the right, the first digit for each station indicates the network number and the final line indicates the station number.
However, the station number of MR (master station) is not shown because it is "0".

"Station accessible from Personal computer" in the tables:
<Example>



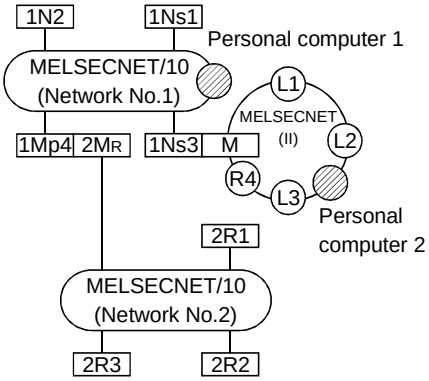


Designated PLC number

	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/ 2MR	1Ns4	2R1	2R2	2R3
Personal computer 1	1-1	×	1-3	1-4	×	×	×

×: Access not possible

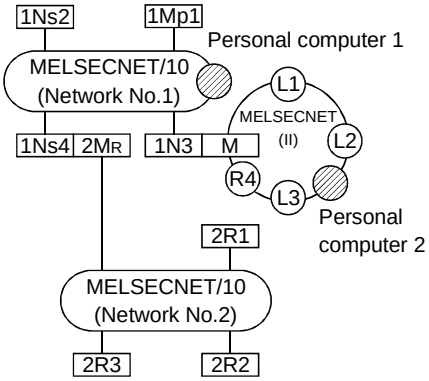
- MELSECNET/10 /MELSECNET (II) composite system



Designated PLC number

	Station Accessible from Personal computer										
	1Ns1	1N2	1Ns3/ M	1Mp4/ 2MR	2R1	2R2	2R3	L1	L2	L3	R4
Personal computer 1	1-1	×	1-3	1-4	×	×	×	×	×	×	×
Personal computer 2	×	×	×	×	×	×	×	×	×	×	×

×: Access not possible



Designated PLC number

	Station Accessible from Personal computer										
	1Mp1	1Ns2	1N3/M	1Ns4/ 2MR	2R1	2R2	2R3	L1	L2	L3	R4
Personal computer 1	1-1	1-2	×	1-4	×	×	×	×	×	×	×
Personal computer 2	×	×	×	×	×	×	×	×	×	×	×

×: Access not possible

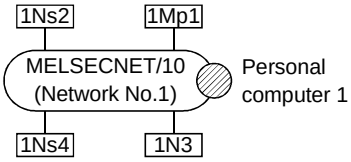
Appendix - 14

2.1.3 Q series start

A	Q/QnA	FX
×	○	×

For inter-PLC network of MELSECNET/10

- MELSECNET/10 two-tier system:



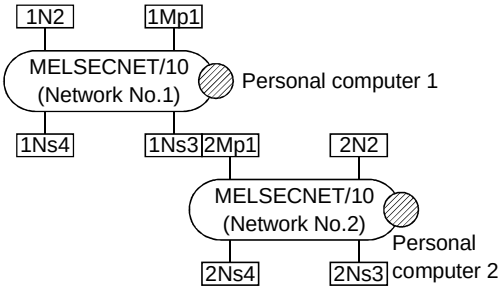
PLC numbers to be specified

	Station Accessible from Personal computer			
	1Mp1	1Ns2	1N3	1Ns4
Personal computer 1	1-1	1-2	×	1-4

×: Access not possible

Mp station...Control station
Ns station...Ordinary station QCPU
N station.....Ordinary station
(CPU except Q/QnA (QCPU-A, AnU, AnA, AnNCPU))
Peripheral devices 1, 2 are those which have built-in MELSECNET /10 boards.
The first digit of each station shown on the right indicates the network number, and the last digit the station number.

- MELSECNET/10 multi-tier system:

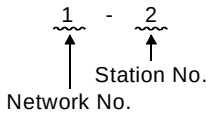


PLC numbers to be specified

	Station Accessible from Personal computer								
	1Mp1	1N2	1Ns3/ 2Mp1	Periph -eral Device 1	1Ns4	2N2	2Ns3	2Ns4	Periph-eral Device 2
Personal computer 1	1-1	×	1-3	×	1-4	×	2-3	2-4	×
Personal computer 2	1-1	×	1-3	×	1-4	×	2-3	2-4	×

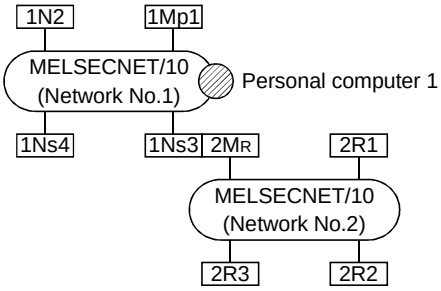
×: Access not possible

"Station accessible from Personal computer" in the tables:
<Example>



For MELSECNET/10 remote I/O network

- MELSECNET/10 multi-tier system



PLC numbers to be specified

	Station Accessible from Personal computer						
	1Mp1	1N2	1Ns3/ $2M_R$	1Ns4	2R1	2R2	2R3
Personal computer 1	1-1	×	1-3	1-4	×	×	×

×: Access not possible

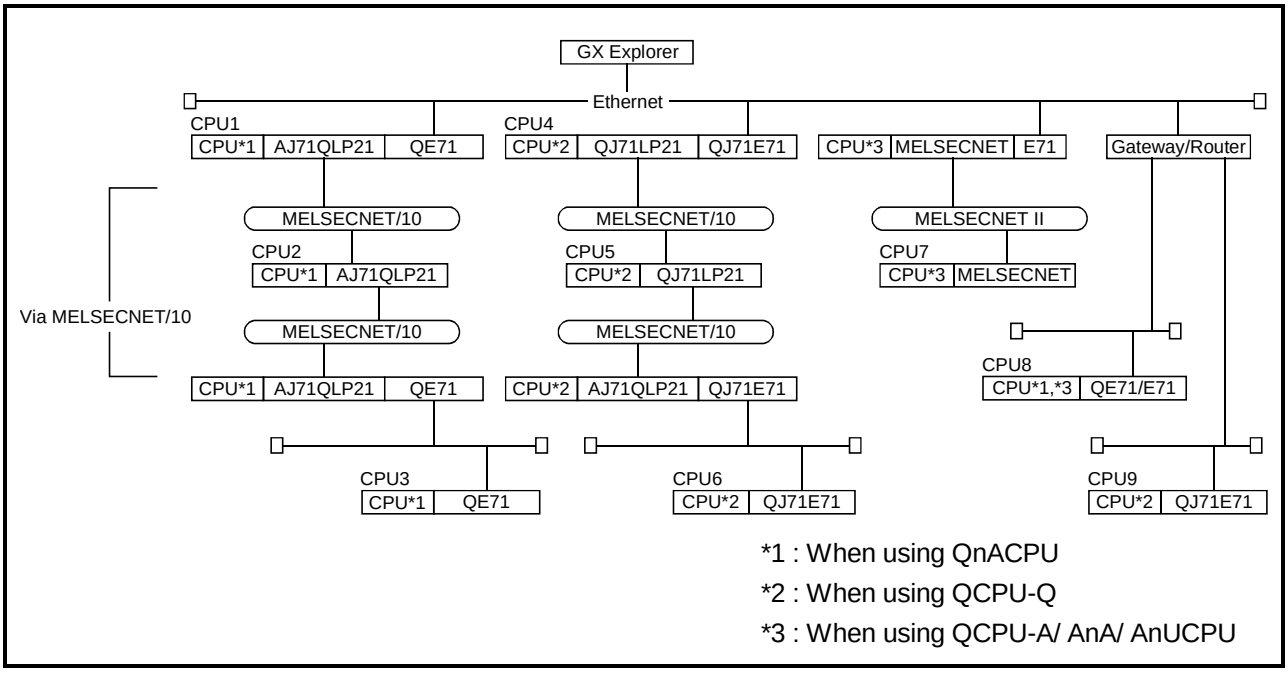
POINT

To access the other station PLC, routing parameter setting must be made using the GX Developer.
For network parameter setting, refer to the Offline Manual.
For details of the network parameters, refer to the MELSECNET/10 Network System Reference Manual.

Appendix - 15

2.2 Access Range via an Ethernet Board

A	Q/QnA	FX
○	○	×



Appendix - 16

- The access range to master stations/local stations/remote stations/control stations/normal stations via MELSECNET (II)/MELSECNET/10 is the same as via a PLC direct link (via MELSECNET).

Function \ Applicable PLC	CPU1	CPU2	CPU3	CPU4	CPU5	CPU6	CPU7	CPU8	CPU9
PLC read/write	○	○	○	○	○	○	○	×	○
Compare with PLC	○	○	○	○	○	○	○	×	○
Delete PLC *1	○	○	○	○	○	○	○	×	○
Keyword/Password setup	○	○	○	○	○	○	○	×	○
Clear PLC memory	○	○	○	○	○	○	○	×	○
Format PLC memory *1	○	○	○	○	○	○	○	×	○
Remote operation	○	○	○	○	○	○	○	×	○
Ladder monitor	○	○	○	○	○	○	○	×	○
Device monitor *2	○	○	○	○	○	○	○	×	○
Device test	○	○	○	○	○	○	○	×	○
Trace	○	○	○	○	○	○	○	×	○
Diagnostics PLC	○	○	○	○	○	○	○	×	○
Diagnostics network *3	○	○	○	○	○	○	○	×	○

○: Access possible ×: Access not possible

*1: Accessible only to Q/QnACPU.

*2: Buffer memory is excluded.

*3: Accessible only to network monitoring own and other stations. (AnUCPU is handled as equivalent to AnACPU.)

Appendix - 17

ACPU

Corresponding Models	Corresponding Versions	Remarks
AJ71E71, AJ71E71-B5 AJ71E71N-B2, AJ71E71N-B5T	Initially shipped version and later versions	If a remote I/O is installed, or during communication, the error LED lights.
A1SJ71QE71-B2, A1SJ71QE71-B5 A1SJ71E71N-B2, A1SJ71E71N-B5	Initially shipped version and later versions	

- The following restrictions apply for access to AnUCPU via Ethernet.
  (1) The PLC type must be set as "AnACPU."
  (2) Sequence programs, device memories, etc. can be used with the AnACPU specification range.
  This means that subprogram 2, subprogram 3, devices extended with AnUCPU, and network parameters, cannot be accessed.

QnACPU

Corresponding Models	Corresponding Versions	Remarks
AJ71QE71, AJ71QE71-B5 AJ71QE71N-B2, AJ71QE71N-B5T	E and later	—
A1SJ71QE71-B2, A1SJ71QE71-B5 A1SJ71QE71N-B2, A1SJ71QE71N-B5T	E and later	—

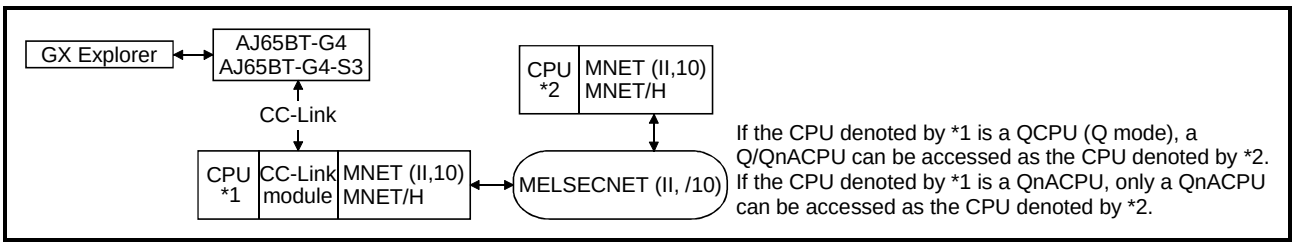
QCPU

Corresponding Models	Corresponding Versions	Remarks
QJ71E71, QJ71E71-B2, QJ71E71-100	Initially shipped version and later versions	—

Appendix - 18

2.3 Access Range via CC-Link (AJ65BT-G4)

A	Q/QnA	FX
○	○	×


GX Explorer
AJ65BT-G4
AJ65BT-G4-S3
CC-Link
CPU *1
CC-Link module
MNET (II,10) MNET/H
MELSECNET (II, /10)
CPU *2
MNET (II,10) MNET/H
If the CPU denoted by *1 is a QCPU (Q mode), a Q/QnACPU can be accessed as the CPU denoted by *2.
If the CPU denoted by *1 is a QnACPU, only a QnACPU can be accessed as the CPU denoted by *2.

- The access range to master stations/local stations/remote stations/control stations/normal stations via MELSECNET (II)/MELSECNET/10 is the same as via a PLC direct link (via MELSECNET).
- When connecting to ACPU, routing through MELSECNET (II) or MELSECNET/10 is not possible.

Function \ Applicable PLC	ACPU	QnACPU	QCPU(Q mode)
PLC read/write	○	○	○
Compare with PLC	○	○	○
Delete PLC	—	○	○
Keyword/Password setup	○	○	○
Clear PLC memory	○	○	○
Format PLC memory	—	○	○
Remote operation	○	○	○
Ladder monitor	○	○	○
Device monitor *2	○	○	○
Device test	○	○	○
Trace	○	○	○
Diagnostics PLC	○	○	○
Diagnostics network	×	○ *1	○ *1
Online change	○	○	○

○: Access possible ×: Access not possible —: Function not supported by ACPU

*1: Only the network monitor host station and other stations can be accessed. (AnUCPU is treated as equivalent to AnACPU.)

*2: Buffer memory is excluded.

Confirm that the AJ65BT-G4 is running one of the following software versions.

CPU	Module Name	AJ65BT-G4 Software Version
ACPU	AJ65BT-G4	A and later
QnACPU		B and later

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2.4 Access Range via Computer Link

A	Q/QnA	FX
○	×	×

The table below shows whether or not each function can be performed via the computer link module.
When accessing the master station, local station, remote station, control station or normal station via MELSECNET II or MELSECNET/10, the access range will be the same as when it is directly connected to the PLC CPU (via MELSECNET).
Some functions cannot be used depending on the type of the PLC CPU. For details on the availability of each function, see the user's manual of each PLC CPU.

Function \ Applicable PLC	ACPU
PLC read/write	○
Compare with PLC	○
Delete PLC	—
Keyword/Password setup	○
Clear PLC memory	×
Format PLC memory	—
Remote operation	○
Ladder monitor	○
Device monitor *	○
Device test	○
Trace	×
PLC Diagnostics	○
Network Diagnostics	×
Ethernet Diagnostics	×
CC-Link Diagnostics	×
Online change	×

○: Access possible ×,—: Access not possible

* Buffer memory is excluded.

The restrictions when executing Ladder monitor, Device monitoring or device tests from a PLC via a computer link module are indicated below.

Connected PLC \ Computer Link	For AnACPU *2	For AnUCPU
AnACPU	○	○
AnUCPU	Possible within AnACPU range *1	○
Other than AnACPU, AnUCPU	○	○

*1: Network parameters cannot be read.
*2: When for AnA (C24) has been designated in connection destination designation when using a computer link module for AnUCPU.

• Setting of transmission specification setting switch

The setting switches at the C24 side are shown below.

Setting Item	Setting Made	Remarks
Main channel setting	RS-232	—
Data bit setting	8 bits	—
Transmission speed	Match with setting at GX Developer	—
Parity yes/no setting	Match with setting at GX Developer	—
Even/odd parity	Match with setting at GX Developer	—
Stop bits	1 bit	—
Sum check yes/no	Match with setting at GX Developer	—
Online program change (write during RUN) yes/no	Match with setting at GX Developer	—
Send side terminal resistor yes/no	Depends on system configuration *1	—
Receive side terminal resistor yes/no	Depends on system configuration *1	—
Computer link/multidrop setting	Computer link	AJ71UC24 A1SJ71UC24-R4 A1SJ71C24-R4

*1: Refer to the Computer Link/Multidrop Link Module User's Manual (Computer Link/Function, Printer Function).

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2.5 Access Range via Serial Communication

A	Q/QnA	FX
×	○	×

The following table indicates whether each function that can be performed via serial communication is possible or not.

Function \ Applicable PLC	QCPU	QnACPU
PLC read/write	○	○
Compare with PLC	○	○
Delete PLC	○	○
Keyword setup	—	○
Password setup	○	—
Clear PLC memory	○	○
Format PLC memory	○	○
Remote operation	○	○
Ladder monitor	○	○
Device monitor *	○	○
Device test	○	○
Trace	○	○
PLC Diagnostics	○	○
Network Diagnostics	○	○
Ethernet Diagnostics	○	○
CC-Link, CC-Link/LT Diagnostics	○	○
Online change	○	○

○: Access possible

* Buffer memory is excluded.

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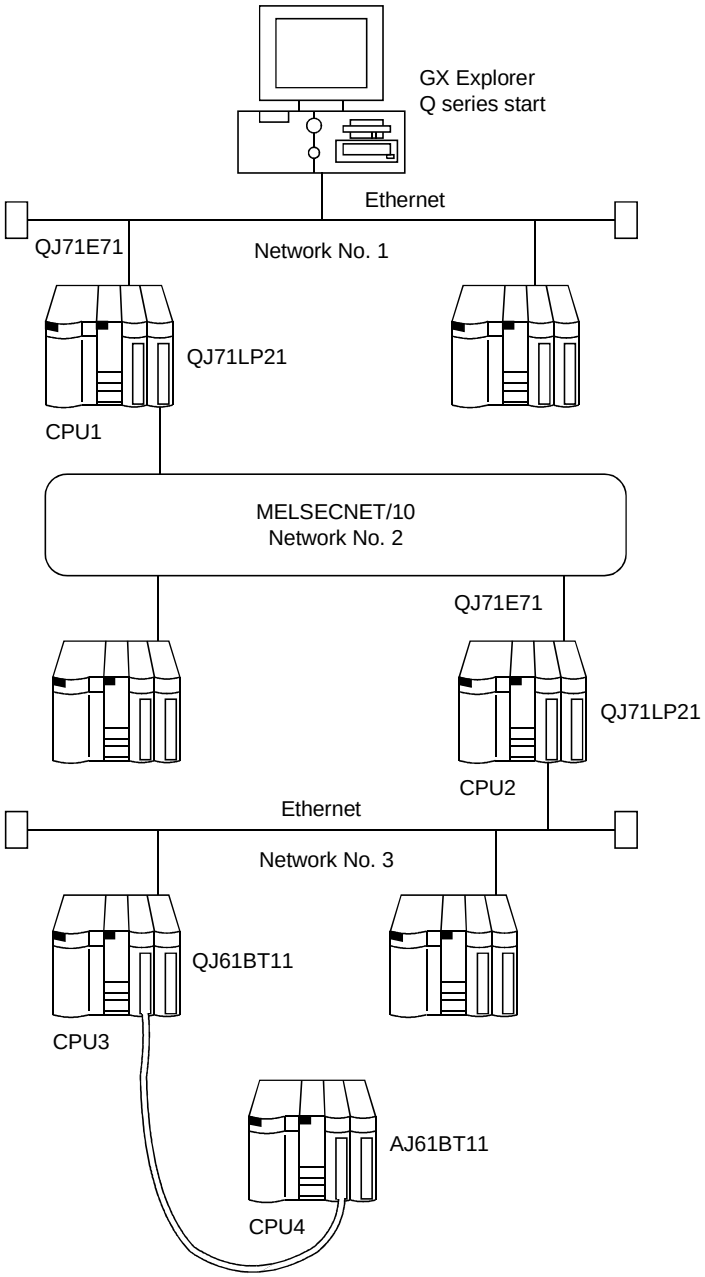
2.6 Access Range for Mixed System

A	Q/QnA	FX
×	○	×

A combination example of Ethernet, MELSECNET/10 and CC-Link will be described.
Set the network parameters (network numbers, station numbers, etc.) to CPU1 - CPU4, and write them to the PLC. (For parameter details, refer to Chapter 14.)



POINT

Ethernet is equivalent to MELSECNET/10.
Set the network numbers and station numbers with the network parameters of GX Developer.

Function \ Applicable PLC	CPU1	CPU2	CPU3	CPU4
PLC read/write	○	○	○	○
Compare with PLC	○	○	○	○
Delete PLC	○	○	○	○
Keyword/Password setup	○	○	○	○
Clear PLC memory	○	○	○	○
Format PLC memory	○	○	○	○
Remote operation	○	○	○	○
Ladder monitor	○	○	○	○
Device monitor *1	○	○	○	○
Device test	○	○	○	○
Trace	○	○	○	○
Diagnostics PLC	○	○	○	○
Diagnostics network	○	○	○	○
Online change	○	○	○	○

○: Access possible
×: Access not possible

*1: Buffer memory is excluded.

POINT

If the E71 module is connected to network No. 2 or No. 3, it cannot be accessed from GX Explorer.

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Appendix 3 PLC CPU Version Correspondence Table

3.1 QnACPU function version

A	QnA	FX
×	○	×

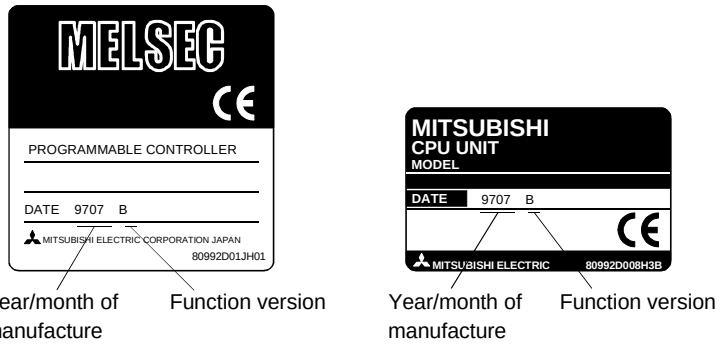
When using the functions shown in the table, use the module for function version B.
To use the functions in this manual listed following, each version of QnACPU (except Q4ARCPU), Ethernet interface module, and CC-Link system master/local modules have restrictions. (See Appendix 3.2 for more information about Q4ARCPU.)
If there is a version higher than those listed in the table, the corresponding functions can be used.

Function \ Module	PLC	Ethernet	CC-Link
	Q2ACPU,Q2ACPUS1, Q3ACPU,Q4ACPU, Q2AS(H)CPU,Q2AS(H)S1	AJ71QE71(B5), A1SJ71QE71-B2, A1SJ71QE71-B5	AJ61QBT11, A1SJ61QBT11
Local device Monitoring/testing	9707B or later	—	—
High-speed communication	9707B or later	—	—
Ethernet parameters	9707B or later	9707B or later	—
CC-Link parameters	9707B or later	—	9707B or later

—: Irrelevant function

POINT

- When using the functions above, use a module that has the following code (9707B or later) inscribed in the DATE entry on the ratings nameplate.



3.2 Q4ARCPU function version

A	QnA	FX
×	○	×

The table below explains the items listed following.
1. Comparisons between QnACPU functions of other than Q4ARCPU and Q4ARCPU.
2. Comparisons of the differences between versions of Q4ARCPU.

When connecting to the Ethernet, use the improved version of the Q4ARCPU (production date (last two numbers of the Western calendar year and the two numbers for the month) is "0012" or later, that software product is version B or higher) and QE71 function version B.
Do not make any setting for the FTP parameters and routing information in Ethernet parameters of the GX Developer because the Q4ARCPU does not support them.

	PLC CPU Version	Ethernet Connection		CC-Link Parameters	High Speed Communication	Local Device Monitor/Test
		Local Station	Other Station			
Q2ACPU, Q2AS1CPU, Q3ACPU, Q4ACPU, Q2AS(H)CPU, Q2AS(H)S1	Function Version A	×*1	×*1	×*1	×	×
	Function Version B	○	○	○	○	○
Q4ARCPU	Production date is "0012", software product is version A or earlier	×*1	×*1	×*1	×	×
	Production date is "0012", software product is version B or later	○	○	×*1	×	×

*1: Set parameters on the GX Developer.
Even if you write parameters set with GX Developer (SW6D5C-GPPW-E 6.04E or earlier product) to the Q4ARCPU, the Q4ARCPU swill ignore the set parameters.

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3.3 QCPU function version

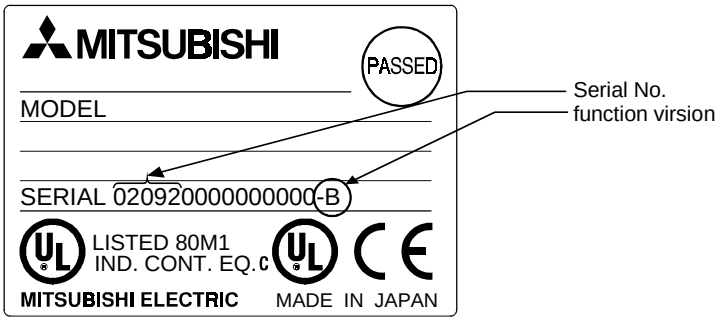
A	Q	FX
×	○	×

The following is how to confirm the function version of the module.
If the version of your module is as indicated in the table or later, the corresponding functions are available.

Function \ Module	PLC CPU	Q-Compatible E71	Serial Communication Module (Q Series)
	Q02(H), Q06H Q12H, Q25H	QJ71E71 QJ71E71-B2	QJ71C24 QJ71C24-R2
Multi CPU setting	Function version B	—	—
Remote password	Function version A Product whose upper 5 digits of serial No. 02092********** is 02092 or later	Function version B	Function version B
Forced I/O registration/cancel	Function version A Product whose upper 5 digits of serial No. 02092********** is 02092 or later	—	—

The function version of the module can be checked by confirming the rating plate on the right hand side of the module and GX Explorer.

(1) To make check in the "SERIAL field of the rating plate" on the right hand side of the module



(2) To make check on GX Explorer
[Operating Procedure]
Choose [Diagnostics] → [System monitor] → Module's Detailed Information button → "Product information".
For details, refer to Section 9.11 "System Monitor".

Appendix 4 Specifying New Devices

This section provides information on device names and specification method that have been changed from GX Explorer Version1.

(1) Extension specification of device name

Extension specification	Target CPU				Specification example	Remarks
	A	QnA	Q	FX		
Digit specification	○	○	○	○	K1X0	Not available in FX/FY, DX/DY, T/C/ST *1
Indirect specification	—	○	—	○	@D100	Not available in bit devices or Z *1
Bit specification	○	○	○	○	D0.0	Not available in Z, V (index), T/C/ST
Index modification	—	○	—	○	D10Z	—

1: When specifying a file register with a block number attached (ER\R*), indirect designation and digit specification are not available.

(2) Extension file register specification

- For a file register of block 1 or higher, place "\" between the block No. part (ER*) and the file register part (R*).
  The block No. can be specified as 1 or greater.
  Note that, when "Specify all points" has been selected in "Device test", only R devices of appropriate block No. are identified as a target. (It does not mean file registers of all blocks.)
- Use "R*" to specify the file register of block 0. (Unable to specify the block No.)

(3) Buffer memory specification

Only buffer memory can be specified by "U**\G**" for all series.
The following table lists whether it can be specified or not in each function.

No.	Function name	Availability	Remarks
1	Device monitor	○	—
2	Device test	○	
3	Trace	○	Not available for Q/QnACPU
4	Timing chart	×	Not available because: • The processing speed will be lowered compared with the internal devices. • Scanning delay will occur at acquisition timings.
5	Error diagnostics	×	
6	Alarm notification	×	
7	Operation analysis	×	

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Appendix 5 Examples of Wiring RS-232 Cable for Connection of C24 and Personal computer

5.1 ACPU

A	Q/QnA	FX
○	×	×

• Connection of RS-232 interface

(1) When a 25-pin connector is used in a computer link module

Computer Link Module Side			GX Explorer Side
Signal Name	Pin No.		Signal Name
FG	1	→	FG
SD(TXD)	2	→	SD(TXD)
RD(RXD)	3	←	RD(RXD)
RS	4	→	RS
CS(CTS)	5	←	CS(CTS)
DSR(DR)	6	←	DSR(DR)
SG	7	→	SG
CD	8	←	CD
DTR(ER)	20	→	DTR(ER)

(2) When a 25-pin connector is used in a computer link module

If the connection between the computer link module and the GX Explorer is made in the manner shown below, designate "without CD terminal check".

Computer Link Module Side			GX Explorer Side
Signal Name	Pin No.		Signal Name
FG	1	→	FG
SD(TXD)	2	→	SD(TXD)
RD(RXD)	3	←	RD(RXD)
RS	4	→	RS
CS(CTS)	5	←	CS(CTS)
DSR(DR)	6	←	DSR(DR)
SG	7	→	SG
CD	8	←	CD
DTR(ER)	20	→	DTR(ER)

Buffer memory setting

CD terminal check (address 10Bh): Without check

DTR control (address 11Ah): Yes (C24-S8, UC24)

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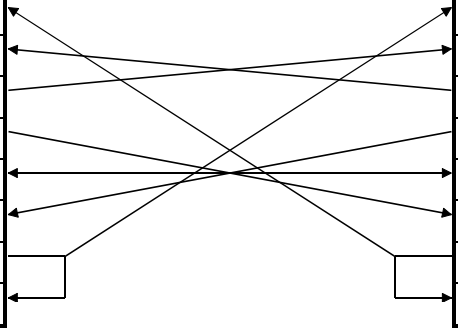
(3) When an 9-pin connector is used in a computer link module

(Example of connection)

Computer Link Module Side	
Signal Name	Pin No.
CD	1
RD(RXD)	2
SD(TXD)	3
DTR(ER)	4
SG	5
DSR(DR)	6
RS(RTS)	7
CS(CTS)	8



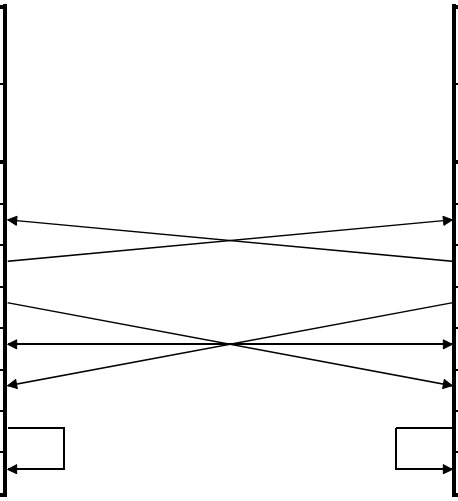
External Device Side
Signal Name
CD
RD(RXD)
SD(TXD)
DTR(ER)
SG
DSR(DR)
RS(RTS)
CS(CTS)

Set "without CD terminal check".

(4) When an 9-pin connector is used in a computer link module

(Example of connection)

Computer Link Module Side	
Signal Name	Pin No.
CD	1
RD(RXD)	2
SD(TXD)	3
DTR(ER)	4
SG	5
DSR(DR)	6
RS(RTS)	7
CS(CTS)	8



External Device Side
Signal Name
CD
RD(RXD)
SD(TXD)
DTR(ER)
SG
DSR(DR)
RS(RTS)
CS(CTS)

*: DC code control or DTR/DSR control is enabled by connecting the DTR and DSR signals of the computer link module to an external device as shown above.

5.2 QnACPU

A	Q/QnA	FX
×	○ *	×

*: Compatible with the QnACPU only.

(1) When a 25-pin connector is used in a serial communication module

(a) Example of connection to an external device that allows the CD signal (No.8 pin) to be turned ON/OFF

Serial communication module Side		Cable Connection and Signal Direction (Full-/Half-Duplex Communication)	GX Explorer Side
Signal Name	Pin No.		Signal Name
FG	1		FG
SD(TXD)	2		SD(TXD)
RD(RXD)	3		RD(RXD)
RS	4		RS
CS(CTS)	5		CS(CTS)
DSR(DR)	6		DSR(DR)
SG	7		SG
CD	8		CD
DTR(ER)	20		DTR(ER)

DC code control or DTR/DSR control is enabled by connecting the QC24 (N) to an external device as shown above.

(b) Example of connection to an external device that does not allow the CD signal (No. 8 pin) to be turned ON/OFF

Serial communication module Side		Cable Connection and Signal Direction (Full-Duplex Communication)	GX Explorer Side
Signal Name	Pin No.		Signal Name
FG	1		FG
SD(TXD)	2		SD(TXD)
RD(RXD)	3		RD(RXD)
RS	4		RS
CS(CTS)	5		CS(CTS)
DSR(DR)	6		DSR(DR)
SG	7		SG
CD	8		CD
DTR(ER)	20		DTR(ER)

DC code control or DTR/DSR control is enabled by connecting the QC24 (N) to an external device as shown above.

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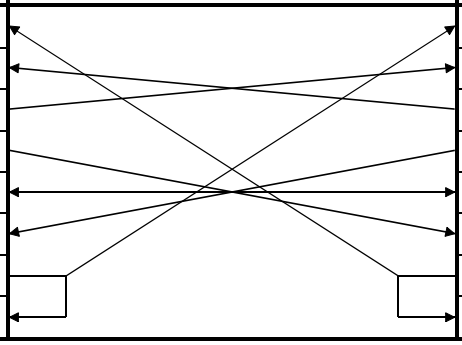
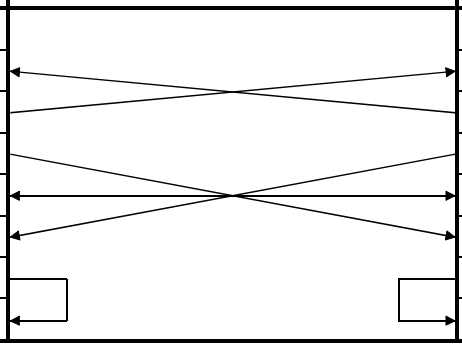
(2) When a 9-pin connector is used in a serial communication module

(a) Example of connection to an external device that allows the CD signal (No.1 pin) to be turned ON/OFF

Serial communication module Side		Cable Connection and Signal Direction (Full- / Half-Duplex Communication)	GX Explorer Side
Signal Name	Pin No.		Signal Name
CD	1		CD
RD(RXD)	2		RD(RXD)
SD(TXD)	3		SD(TXD)
DTR(ER)	4		DTR(ER)
SG	5		SG
DSR(DR)	6		DSR(DR)
RS(RTS)	7		RS(RTS)
CS(CTS)	8		CS(CTS)

DC code control or DTR/DSR control is enabled by connecting the QC24 (N) to an external device as shown above.

(b) Example of connection to an external device that does not allow the CD signal (No. 1 pin) to be turned ON/OFF

Serial communication module Side		Cable Connection and Signal Direction (Full-Duplex Communication)	GX Explorer Side
Signal Name	Pin No.		Signal Name
CD	1		CD
RD(RXD)	2		RD(RXD)
SD(TXD)	3		SD(TXD)
DTR(ER)	4		DTR(ER)
SG	5		SG
DSR(DR)	6		DSR(DR)
RS(RTS)	7		RS(RTS)
CS(CTS)	8		CS(CTS)

DC code control or DTR/DSR control is enabled by connecting the QC24 (N) to an external device as shown above.

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5.3 QCPU

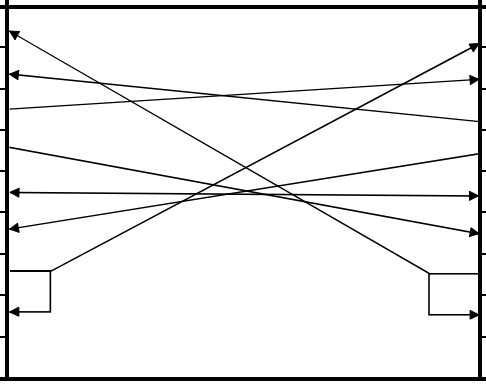
A	Q/QnA	FX
×	○*	×

*: Compatible with the QCPU (Q mode) only.

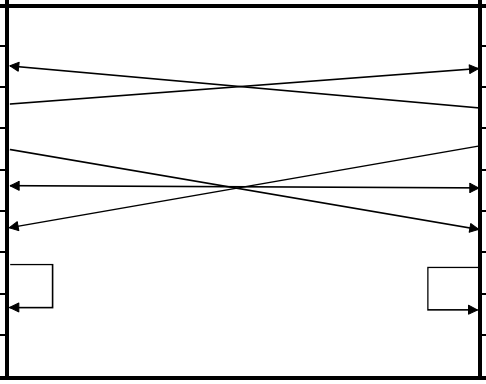
The connector specifications are indicated below.

Pin Number	Signal Code	Signal Name	Signal Direction Q-compatible C24 ↔ external device
1	CD	Receive carrier detection	←
2	RD (RXD)	Receive data	←
3	SD (TXD)	Send data	→
4	DTR (ER)	Data terminal ready	→
5	SG	Send ground	↔
6	DSR (DR)	Data set ready	←
7	RS (RTS)	Request to send	→
8	CS (CTS)	Clear to send	←
9	RI (CI)	Call indication	←

(1) Connection example which can turn ON/OFF CD signal (No. 1 pin)

Serial communication module Side		Cable Connection and Signal Direction (Connection example for full duplex/half duplex communication)	GX Explorer Side
Signal Name	Pin No.		Signal Name
CD	1		CD
RD (RXD)	2		RD (RXD)
SD (TXD)	3		SD (TXD)
DTR (ER)	4		DTR (ER)
SG	5		SG
DSR (DR)	6		DSR (DR)
RS (RTS)	7		RS (RTS)
CS (CTS)	8		CS (CTS)
RI (CI)	9		

(2) Connection example which cannot turn ON/OFF CD signal (No. 1 pin)
Connection example for exercising DC code control or DTR/DSR control

Serial communication module Side		Cable Connection and Signal Direction (Connection example for full duplex communication)	GX Explorer Side
Signal Name	Pin No.		Signal Name
CD	1		CD
RD (RXD)	2		RD (RXD)
SD (TXD)	3		SD (TXD)
DTR (ER)	4		DTR (ER)
SG	5		SG
DSR (DR)	6		DSR (DR)
RS (RTS)	7		RS (RTS)
CS (CTS)	8		CS (CTS)
RI (CI)	9		

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GX Explorer Version 2

Operating Manual

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MODEL CODE	13JU49
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